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IN ALL THEIR DEPARTMENTS.

BY A COMMITTEE OF PRACTICAL SURVEYORS, ENGINEERS, AND ARCHITECTS, OF MUCH EXPERIENCE AND IN ACTIVE EMPLOYMENT.

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ARCHITECTURAL HAWKERS.

MESSRS. BURNISHER AND BRAZENFACE.

EVER since the days of the Romans, when, in common parlance, *Mercator* and *Fur* were synonymous and interchangeable terms, and for one knows not how long before that period, to get money has been accounted the primary and legitimate purpose of every man who lives by bargains, and to this every other consideration is held to be subservient. "Honestly, if you can" is a qualification which sounds well in the ears of the public; but if not honestly, yet "get money," is the still, small, and internal voice which is understood to rule in the heart and influence all the conduct.

"The remnant of Jacob" are the only people among whom this has been considered as the ruling propensity, in modern times; though, when we investigate the cause through the medium of its effects, we find that the propensity has been, and still continues to be, as strong on the Christian side of the "Trojan Towers" as it ever was, or ever can be on the Jewish. Through a considerable period of the middle ages, Christian force laid grievous burdens on, and extorted vast sums from the scattered Israelites; but as this was done by the strong hand of power, on account of the sufferers not being Christians, or capable of protecting themselves as a nation, and probably by way of reprisal for the spoiling of the Egyptians, when the race of Jacob went forth of the land of Goshen to their long sojourn in the Desert, it was looked upon at that time with commendation rather than with censure, and thus it has been transmitted to us on the record.

The adventures of the early voyagers about the time when knowledge began to awaken from its long slumber in the Western world, showed that this was the grand impulse with them; and both in the west and in the east, the deeds of them and their successors are unparalleled in the history of cruel and atrocious avarice.

But with what are now termed the Professions, the case was very different; and no appellation at all similar to *Fur* was bestowed upon those men who contrived and executed public works of ornament or of utility. One would suppose that there is something in the nature of the Professions themselves, which ought at all times, and in the cases of all professional men, to raise such men above the low and grovelling character and conduct of those whose main object is to accumulate wealth, without being at all chary about the means. And when professional men descend from this high and honourable place, it is but too certain evidence that the people whom they labour to serve, and whose country they strain their every power to adorn, have not the proper feeling of their real character and merits. This mental deterioration is of comparatively modern growth, and perhaps it is more general as well as more barefaced in Britain than in any other country. If, for instance, a British painter has the hardihood to attempt a first-rate picture, such as would do honour to the school of art and the country, he must work out his attempt under the feeling that privation and want are all the while impending over him, and staring him in the face; and this is a state of things under which a first-rate work of art cannot be produced. In reality, the case is much the same in every profession, only, it appears more striking among painters than among any others. One cause of this is the existence of another occupation—or, rather prostitution of talent, to which the painter is driven by sheer necessity, as a parish pauper is driven to the Union Workhouse. This is portrait painting, or more strictly speaking, "making faces;" and if the things so produced shall, by any means, be preserved to an age of more taste and refinement, the people then living will marvel at what an ugly-faced race lived in our time, and how strong a family likeness there was among them. It cannot be otherwise; for the artist thus degraded is a mere broker in smudged canvass; and he naturally follows the plan of producing vendible morceaux of that at the least expense of study and labour that he can contrive. Hence, if he has capacity enough to make but one face which shall be his own, that is, which differs from one made by all other face-makers, he has a stock in trade for life, and finesse and flattery are pretty certain to bring this stock into market. This one face is modified according to the fancy of the artist, and the shape and colour of the "patient's" visage; and with the requisite additions or subtractions, or both together, it becomes the groundwork of what is called the portrait of any man, woman, or child. This one model which, variously altered, runs through all the faces of the same maker, forms what is called his manner, and the public admiration of the manner very much depends upon this one original. Hence, very many who are incapable of manufacturing for themselves anything that is at all bearable, take their models from some of the great masters of ages now gone by, and give them a modern air by means of costume, while they are further concealed by the difference between an old painting and a recent one, as well as by the inferiority of modern colours.

Some may suppose that these practices of painters have no bearing on that art which is named at the top of this paper; but the case is not so. It is with the professors of the arts as with sheep: a single rotted individual very speedily contaminates the whole flock; and though perhaps the three branches of the Engineering arts are less tainted than most others, there are symptoms of contamination among them, more especially among the lower grade of architects; and though we believe the higher order in all the three professions are uncontaminated as yet, the malady is of so infectious a nature as that it may soon reach them,—more especially the architects, who, by addressing themselves much to the vanity of their employers, approximate more to the condition of painters than do any other of the three professions. It is this resemblance which has induced us to take the painters for our illustrative example, upon the general principle that mankind profit most by necessary admonition, when that admonition

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is applied to others, and not directly and personally to themselves.

In ancient times, and through great part of the middle ages, the state of architects was very different from what it is now, and the change of state has been productive of anything but real improvement. To take the illustration from our own country, we may remark that we have now no such architects as those who planned the ancient cathedrals and first-rate churches. Those architects of the midddle ages were men of note and influence, and so heartily did they go to work, that they produced a system of architecture for sacerdotal purposes, which is unrivalled, except in the proximate parts of continental Europe. They were men of high talents, and much public influence; and these circumstances rendered them superior to all grovelling and selfish notions. The consequence was, that their church architecture, which is the only class whereupon they brought their whole energies to bear, is of a very high character; and perhaps there is not in the whole range of architecture a system so beautifully adapted to its intended purpose as the church architecture of England, after it had been elevated above the clumsiness of the very ancient times, and before it was debased by that frippery whereby the most modern specimens are degraded. In those days, sacerdotal architecture was the only species upon which talent was brought to bear, and as those who practised it ranked too high to pay their court to any party, it is perhaps a more pure and genuine emanation of genius than any other style that can be named. Other architecture in these days, there was scarcely any worth of naming. Strength to repel a foe or retain a prisoner, was the chief object in the baronial mansions, and the fortalices of the inferior men of influence; and the dwellings of the great body of the people were tasteless hovels, which, in modern times, would scarcely be admitted to rank in the same class with respectable pig-styes.

The sacerdotal building, and, but too frequently, the pig-stye hovel still remain; but some little system has been introduced into the first of these parts, so that that part is the chief, though not perhaps the most ordinary one to which modern science has been applied; and it is in or around these that there is scope for the architectural delinquencies which have led to that degraded state of things, after which many can inquire but exceedingly few can improve; and which have, perhaps, done much for the advancement of architecture in some localities, and given farther scope for its improvement in others. Truth, however, compels us to say that, of late years, golden opportunities have been shamefully neglected, and those stimuli which should and might have excited and fostered good taste, have had the very opposite results—have spotted the land with ludicrous abortions, and deluged the architectural profession with ignorant blunders.

When, several years ago, the *Kurioikomania*, or rage for church-building, came with full-moon furor upon certain influential classes in this country, and made them dip their hands, some seven-church deep, into the pockets of divers parishes, besides procuring as a solatium to the stricken and smarting consciences, a competent dose of that universal panacea for the compound maladies of fear and fanaticism—the public purse;—when this fell in compound distraction and dementation upon the parties alluded to, there was a glorious opportunity afforded for a renovation of our church architecture; and, as domestic hostility and feud do not now stand with drawn swords in the way, the improvement thence originating would have gradually extended to architecture of all descriptions, and we should have gained credit among the nations for being as forward in taste, as we are now said to be ostentatious in purse. But how has this opportunity been improved? Shades of Lanfranc and Wykeham! stand aloof, and look not upon the mental nakedness of those who have assumed the name, but not the reality of being your successors. Be it borne in mind, that the two mighty names of old which we have mentioned, are not those of common, or professional architects, who got their employment by competition, or by job. They were the foremost men of their time; and, from the original idea to the finished structure, all emanated from their mental conceptions, so that the fabrics which they raised are far more truly their monuments, than St. Paul's Cathedral is the monument of Sir Christopher Wren: for St. Paul's is in great part a copy, and there lurks inside a vast quantity of timber, concealed and supporting that which seems externally to be one mass of solid masonry, with its stately dome self-balanced, and sustaining all over it. The fault, however, is not in Sir Christopher, but in the style of the building, which is ancient Roman; and, though that style does very well for any other building from a palace to a pozzi, it is just as incongruous for a christian church as a statue of Jupiter Tonans would be on a christian altar.

Of the perversion of the opportunity thus afforded, and of the display of bad taste in effecting that which might have taught good taste, without any increase of expense, it is not easy to point out the primary cause. It were ungracious to lay it to the charge of the church dignitaries, or even remotely to fancy, that they and their co-operators were anywise influenced by the glory of having their names, their efforts, and their contributions, set forth in the public newspapers. Mere carnal men are often overcome by this sort of vanity; but that church dignitaries should be so affected is not absolutely a necessary consequence; and so, we note this part of the subject *obiter*, and proceed to others.

And the first that strikes us, is the contrast between the church dignitaries of the present day, and those of the days of Lanfranc and Wykeham. These men understood the principles of statics, their knowledge and taste in architecture were first-rate, and so thoroughly had they studied the practice, that they knew when every man did his duty, and when not, to what part soever of the work that duty might relate. We question much whether any of our present church dignitaries understands as much of statics as to be able to comprehend the true doctrine of the arch; we are sure that not one of them could build a rod of common brick wall, and as for architectural taste, if they have any, they keep it to themselves, so that their having or not having are matters of perfect equality and total indifference to the public.

Yet if these parties were not church dignitaries, created such by the *congé d'élire* of the monarch, and purified and strengthened by consecration and the laying on of hands, we should say that their conduct is bad in itself and has an evil tendency; and, church dignitaries though they be, we cannot refrain from saying, that in the matter of these new churches they have perpetrated a great absurdity. In order to raise the funds, they flattered, *ad nauseum*, the fanatical section of the great, and, as Burns says, "shored weel with hell" the refractory ones, until all ran as smooth as oil into the channels and crucibles of sacerdotal desire. Now, though this was "mighty well" as far as it went, it did not go half the length that it ought to have gone; for if these parties performed the somewhat ungracious task of tax-gatherers, they ought also to have looked after the expenditure, and taken care that the

new churches were not only worth the money they cost, but worthy of the church—and especially of the nation. This they have not done; and therefore they have failed in what, so far as architectural taste and its moral effects are concerned, ought to have been the most valuable part of their duty.

The consequence has been that a flood of "anybodies" set in for the time, upon the architectural professions; and what it left behind it, is as raw and poor as can well be imagined. These new churches may be divided into three classes;—barns ornés, Gothic ghosts, and classical rifacciamentos, hashed up from a bit of this, and a bit of that, till there is nothing like them under the canopy of Heaven,—they are the *olla podrida* style of architecture.

We pass over the barns, because they are the cheapest, and are certainly an improvement upon weather-boarded walls and roofs of thatch. The slain Gothic calls for a little malediction; for those parts which are essential to strength in a genuine Gothic building, are useless garnish in these imitations: the buttresses and spandrels have nothing to support, and where there are flying spandrels, the only action which these could have would be in poking holes through the brick wall, whereas, in the genuine building, each supports a corbel, whence springs an arch, as part of the roof. The imitation vaulted roofs again are mere lath and plaster; and if they were not held up by concealed timbers, the very church rats, proverbial as they are for the leanness of their bodies, would fall through, to the serious consternation of aged spinsters,—and others.

As to the hashed classical churches, one knows not what to say. Very often the only part of them which has a classical resemblance, is a portico after some of the old orders of architecture, and when this is built of stone, and the body of the church of brick—not an unfrequent case—it looks like a great hen-coop at the door of a barn. The grand puzzle, however, is the tower or spire, which is especially restricted to churches of the Establishment in England. For this there is no classic model; and therefore the choice is between a simple spire, and a number of peristyles, set the one on the top of the other like the joints of a pocket telescope when drawn out. At Langham Place, Mr. Nash tried something new, by surrounding the lower part of a bodkin-spire with a peristyle, as if the said spire were in the parish pound; and, at a distance, the whole affair looks as if a tailor had set his bodkin bolt upright, and slipt his thimble over it as far down as it would go.

Every description of tower, or spire, which has been applied to these pseudo-classical fabrics, is incongruous and out of place; and it is difficult to say whether the blunt tower or the bodkin spire is the most so. So much at variance are the building and this addition, that it is impossible to generalize the two, and have that reverential feeling for the conglomerate, which is inseparable from the contemplation of a building, all the parts of which are in harmony. The idea which rises first in one's mind in viewing such a building, is that of a watchman's rattle, whereof the church represents the stock or body; and tower, or spire, the handle of the ratchet wheel; and if it could be converted into a real rattle, and swung with proper effect, it would doubtless prove a greater terror to evil spirits than all the bells of the Catholic churches. Upon one of those bells we have read it most blasphemously recorded, that the great Founder of Christianity, and St. Augustine, had both failed in their attempts to drive away those spirits, but that the bell bearing this inscription did the business; and if a bell could accomplish this, what might not be expected from a great church lifted on high, swinging round on its steeple, and grating forth sounds more harsh than the whetting of ten thousand scythes.

In part this has passed over, and the rest of it is in progress, or in prospect, and, generally, as it has ceased in a given locality, it has left its slot upon the architectural profession, in the in-break of men whose only claim is that each has built a church. There are exceptions to this, and high and honourable ones to the parties employed; but they form so small a fraction of the whole, that they only increase the bitterness of the thought, that so much might have been done and so little has been accomplished.

The building of the Poor-law-Union houses was another matter, general over the country, and suitable for architects of a lower grade—not indeed above the capacity of the most unpretending bricklayer, or even hod-man. This called forth a fresh brood of pretenders, lower, in every sense of the word, than those who bungled the churches; and perhaps the letting in of them, has done the most serious injury to the taste and the honour of the profession. We do not say that the blundering of one man can destroy or deteriorate the talent of another; and as little would we insinuate that the honour of an upright man can be taken from him by the greatest obliquity in his neighbour. But these crafty pretenders may retard the success, and diminish the reward, of the honourable part of the profession. Locusts do not directly kill and eat sheep and oxen; but they consume the food of these; and thus the flocks and herds perish, as certainly as if packs of wolves and other ravenous beasts were let loose among them, and they perish more slowly and in greater misery.

The simultaneous building of so many Union work-houses brought into the field a number of spurious architects, just as the parish surveys gave scope for spurious surveyors. In both cases, the main object appears to have been to get the jobs done as cheaply as possible,—not for the purpose of saving money to the public, but in order to put more into the pockets of those who projected or superintended the jobs. In the case of the surveys, wholesale contracts were taken by men who were no surveyors, and who barely knew the distinction between a Gunter's scale and a tailor's goose. This was disgraceful, both to those who let the jobs and to those who took the contracts; and we could mention several instances, only we dislike personal allusions. Though at low rates, these wholesale contracts were taken solely with a view to pecuniary profit, and consequently they were sub-let in cases where a show of surveying was necessary, to persons having no qualifications for the work. Still, however, as these sham surveys yielded more profit to the managers, they passed more readily than if they had been executed in the first style by men of ability. By this mode of proceeding, the profession of surveying, in England, was degraded to a state from which it will not soon recover; for surveying leaves no memorial but the plan, for testing the accuracy of which another survey would be necessary, and having surveyed a parish or parishes to the satisfaction of those appointed by parliament to judge of the matter, was a sufficient diploma, and introduction to future employment. In so far as they went, the poor-houses had the same effect upon the architectural profession; but fortunately there are gradations in that; and as the poor-houses are in general very ugly structures, the building of them, even to a very considerable amount, did not tend to raise the pseudo-architects very high in the scale. But, though they could not mingle with the profession as efficient men, these parties were, and remain, in the country under the name of architects; and they are continually on

the prowl for works of all kinds, by sinister means, and not by acknowledged talent and fair competition. In this way they make a sort of inroad upon the honour of men of more talent, and higher station than themselves, by forcing these to finesse in self-justification; and until, as has often been recommended in the course of this work, the whole proceedings by which architectural appointments are obtained shall be laid open to the public, genuine merit will labour under great disadvantages. It deserves to be borne in mind that an architect of talent, who loves his profession, and labours to make himself intimately acquainted with it, lies under considerable disadvantages in trick and finesse, as compared with those men who substitute impudence for talent, and finesse for study. In the first place, he feels himself humbled and degraded by making even a slight descent to those practices by which the wily win their way. In the second place, he has no time for such labours; as the intervals of his professional labour must in great part be devoted to professional study. In the third place, he cannot bring his mind into the state necessary for craft and finesse; because the whole tenor of his thoughts is directed to the improvement of his profession. In the fourth place, he cannot condescend to the low flattery and falsehood, which are the means whereupon the man of mere craft chiefly depends; because, though a man of sterling talent may be silent in the presence of a mere random speaker who knows nothing, he will not condescend to assent to such; and far less will he applaud them. It is this constant occupation of the mind in the pursuit of knowledge, and this absence from all pursuit of it, which constitutes the grand cause why the competent man often fails, and the incompetent one succeeds. This is not confined to architecture, but extends to every profession and every trade, and is perhaps more general in Britain than any other country. Our present business is with architecture only, and perhaps we shall best illustrate that, by putting a case of two parties or confederates well adapted for playing into each other's hands in this kind of gambling.

Let us then suppose that there are two parties conspiring together for a purpose of this kind; and, in order to avoid even the semblance of personality, we shall call them Messrs. Burnisher and Brazenface, HAWKING ARCHITECTS. At the outset we shall suppose them to be, as such characters very generally are, very little known to the profession, and the duties of the profession less known to them; for young men bred in the office of an architect of high character, always imbibe a certain portion of that, and thus they would scorn such practice as that of Messrs. Burnisher and Brazenface.

These men have, however, talents of a particular kind, and they work well together. Burnisher, whatever he may be in the way of invention, can draw, and also alter the designs of others so as to give them at least an air of originality. Brazenface knows little of the proceedings of an office, or of their practical applications, but he is an adept in finding out the weak sides of men; and he has no modesty to trammel him in working upon them. These are their leading qualifications; and the next point to be considered, is their preparation for the attack. Burnisher fags away at the drawing board, touching and altering plans much in the same way that a Jew pedlar sits in a cellar in Monmouth Street, renovating threadbare coats, and translating old shoes. He fags away until he gets two or three drawings of each of the classes of edifices which are most in request at the time, and when he has gotten these, of a number and in a style to suit Brazenface, they are sent to the lithographer, and a considerable quantity worked off. While Burnisher is thus employed, Brazenface is hunting about to nose out what jobs are to be done; and his sense of smelling them out is pretty keen. Along with the job, he finds out how and by whom it is managed, and what parties interested in it are most susceptible of flattery. If, as is often the case, he finds the majority of this description, the job is at once booked as sure game, and as there always are vain men connected with public matters, he feels confident of gaining some in every case; and if he should not ultimately succeed in that, he makes the firm known, and gives them confidence of success another time.

Having got this preliminary information—which, after some practice, is easy to a man that cannot be abashed, he returns to Burnisher, and selects from his portfolios such drawings as the two together supposed to come near to what is wanted. Of these, that is, of the lithographic plates, he packs *quant. suf.* in his wallet, and forth he fares with the true furnishings of a hawker, both external and internal. These drawings, or plates, it will be understood, cost next to nothing, and therefore he can furnish an entire set for a large building, at absolutely less time and expense than a regular and original architect would require in finding out what he had to do. As to the style and quality of the wares, we say nothing; and in the beginning of their career, Burnisher and Brazenface were satisfied with the most common and coarse structures, provided they got plenty of them; and these scattered over different parts of the country. This gets them name and connection; and as every body does not know the difference between being simply called the architect of a building, and being the contriver of it, the name which they thus acquire finds them fresh occupation, and, it may be, occupation of a higher order. Recent times have been highly favourable to them, but we suspect they are of pretty long ancestry; for very many of the public buildings, in all parts of England, have upon them the impress of Messrs. Burnisher and Brazenface too strongly for being overlooked or mistaken.

From the way in which these lithographic prints are procured—and Burnisher's drawings may be substituted for them on emergency—no regular architect can compete with such a firm as this, on the score of remuneration. If they get an early scent of the job, so as to be in the field without any competition, they will charge the regular price, or more than double the regular price in proportion to the quality of their wares; but if there are other competitors, they will come as low as one per cent. commission, instead of the regular five per cent.; and, indeed, they will occasionally do a job for nothing, just to keep others out of the field. Such parties cannot, of course, compete with first-rate architects where there are talented umpires; because one such exposure would be fatal to them. Therefore, their machinations are directed against young architects, who have their connections to form, and their business to make; and the mischief which they do in this way is as fatal to the profession as it is unjust and injurious to those against whom it is practised. Hence, if the superior class of architects possess the proper feelings of respect for that profession, in which their talents have made them great—and we have no reason to doubt that this is the fact—they should make common cause with those who have been their pupils, and who should be their legitimate successors; and scout Messrs. Burnisher and Brazenface out of the profession, and of society, with scorn and contempt. The higher species of architecture, and indeed good and appropriate architecture of any kind, meets with

but scanty patronage in Britain, and, therefore, it ought not to be borne that one iota of it should be devoured by such wolves as these.

Foreigners are astonished at the success of such undeserving characters in Britain; and they would not succeed in any other country. But there are causes for their success, some of which are worth noticing. First, there is the indifference of the people, and those who ought to be their leaders in matters of taste, in all works of public interest. If the work belongs to that class, the supporting of which can in any way be construed into charity, the great man tosses his subscription at it as he would alms to a beggar; but if the matter is one of general usefulness, and languishing for want of pecuniary support, or friendly recommendation—which is often the more valuable of the two, the great man struts past in aristocratic indifference, and deigns not to bestow upon it even one friendly look. But the vain of all classes are fond of apeing the great, and thus this indifference descends pretty low in society; and the art is deprived, not only of their patronage, but of the countenance which is so justly due to it.

This is eminently favourable to the proceedings of Burnisher and Brazenface, for it relieves them from the scrutiny of public opinion, which is the most formidable enemy of such parties; and, therefore, they have a clear field to work upon in their own way. Cheapness is the grand key to the heart of most Englishmen; and the firm can come as low as may be desired. Then, as the said firm have little trouble with the drawings, they give themselves small concern about the execution of the work. This is a grand attraction for such parties as are likely to undertake contracts under Burnisher and Brazenface. If the work is skinned over, so as to have a decent appearance externally, all the hidden parts may be of the worst materials, and put together in the worst manner. Such work can be contracted for at a low price, and yet afford a large profit. This cheapness pleases the owners, puts money into the pockets of the contractors, while those of Burnisher and Brazenface get never the lighter after a proceeding of this kind.

That such men should be tolerated, is a shame; and that they should have been largely employed in works understood to be by parliamentary commissioners, under the express directions of that august body, is an abomination. We are all too prone to estimate the capacity and character of men by the station of those who have employed them; and there is not the least doubt that Brazenface has got many a job by boasting of the number of union poorhouses which he and his partner erected, under the commissioners and guardians, and the indirect sanction and approbation of parliament. This is a triple certificate, having no foundation in merit, but yet very unjustly placing the parties alluded to upon a vantage ground, to which they have not the slightest title. We do not quarrel with the name of Brazenface, nor do we care though his visage were fortified by as many doublings of that, as the shield of Ajax was of bull's hide, and as little would we find fault with him or his partner for making the most of his profession by fair and honourable means; but to act as they have done must have required, not merely a face of brass, but a head brazen throughout—sheer back to the occiput. It is only of late that our attention has been called to this subject, but we shall return to it again as occasion may require.

PROPOSED SUSPENSION BRIDGE ALONG THE THAMES.

Owing to the absence from town of some of the parties who promised to furnish us with the data, and the close occupation of others, we are not yet in a condition for laying before our readers the details of the expense of this work. We may safely say, however, that, long as it is, it may be substantially erected for considerably less than would be necessary to erect a chain bridge, of the ordinary construction, across the river at Hungerford Market, at the same time that it would be equally strong for the transit of goods, and much less liable to injury. The foundation of the saving, and, indeed, of all the good properties of this project, consists in the adoption of chains upon Mr. Dredge's principle. What with lessening the weight at the centre, and getting rid of the strength necessary for supporting that, one-ninth of the quantity would suffice, and this would reduce the pressure on the piers, in so far as the chains were concerned, to one-ninth also. This, again, would allow of the piers being made much more slender; and, with the exception, perhaps, of the roadway, the whole weight and cost of the bridge would be reduced, though perhaps not so low as to one-ninth, yet not a very great deal higher. There are, however, some principles involved in this general estimate, which require a good deal of consideration; and, therefore, what we have now thrown out, though based upon sound principles, must be regarded as hints, and not as absolute conclusions. We have received several private communications on the subject, and we hope that it will continue to be studied until the objections which some make to it be altogether removed. One correspondent asks how Thames Street is to be crossed? To which we answer, By a suspension arch, which will give the whole width of the street, and thus offer no obstruction. Another suggests, that the blocks of building in the projected new street should not consist of more than three houses; that they should have no windows or other apertures in the ends: that the porches between them should be fire proof; and that a large cistern of water should be placed on the top of each block. These would certainly be efficient preventatives of the spreading of fires, and they could be obtained without in the least impairing the architectural effect. A third correspondent recommends that the roadway should be constructed by a joint-stock company, and he cites several passages from our pages in corroboration of this, at the same time that he admits the force of certain temporary objections to joint-stock companies. We admit that, upon careful reconsideration of the subject, this correspondent is right in saying that, "unless this work is undertaken by a joint-stock company, it will not be undertaken at all." Before we examine his arguments in favour of the company, we shall mention the temporary objections which he admits, and the means that he suggests for overcoming them. He contends, that a joint-stock company, besides being the only means by which a great work like this can be executed, is an excellent thing in itself; and the objections are not against the system itself, but against the abuses of it. These abuses may be reduced to two heads; first, the impropriety of the project itself; and secondly, the improper conduct of those with whom it originates, and by whom it is conducted. The first of these may be reduced to the improper situation of the work, that is, the placing of it where, even under the most judicious management, it will not pay. If the public do not pay a fair remuneration to those who embark their capital in a

work the object of which is public accommodation, then it is evident that the public do not require the said work; for, whatever may be the case with individuals, the public always pay for what they really want, and of this they themselves are the best judges, only they give their judgment by experience after the work is completed; and if this is adverse to the project, the proprietors are left in the lurch, and lose a part, or the whole, of their capital, according to circumstances. The case may be even worse than this, for it may be such that the repairs and cost of attending to it may exceed the revenue; and in such a case, the proprietors pay for that which is really a loss to them, and which, therefore, both they and the public would be better without.

The second head, of which the first is only a sort of modification, is by far the more important of the two. If a public work is placed where not wanted, it argues ignorance on the part of those by whom it is projected and executed; and though this may not be quite so culpable as making the company a mere trap for catching unmerited profits, the loss to the shareholders and the public is exactly the same; for, to lose any given sum of money through the bungling of a fool, is precisely the same loss as being deprived of an equal sum by the machinations of a rogue. The first head of objection, therefore, lies chiefly against those who tamper with the projecting of public works, without knowing anything about the principle or application of them; and the second lies against those who enter into such projects for dishonest purposes, whether they have or have not a knowledge of such projects.

When joint-stock aberration takes so strong a hold on the public as to produce dementation, or mania, the fools and rogues, and more especially the binary compounds of rogue and fool, congregate like vultures to a battle field. The railroad mania, which was rabid enough in itself, did not come singly upon the country, for the joint-stock bank mania accompanied it, or immediately followed, and was perhaps a production of the other—it furnished fictitious schemes with fictitious capital, until their schemes were ripe for being sold to other parties for real money; and, when the schemers got hold of this, they put it in their pockets, and walked off in quest of fresh means of cheating the public, until their cupidity was gorged to the full.

It is quite evident that men of talent or principle—and these generally go together—could not have been employed in this sort of work. But it is with the public, as with a stream when in full flood; all the unclean things which, in tranquil states, remain quietly at the bottom, are brought to the surface by the agitation of the waters; and, upon the very same principle, the dregs of society become the scum, when that society is visited by any particular mania.

In consequence of this, the railways and the joint-stock banks in very many instances originated or were promoted by parties who not only possessed no knowledge of them, but were incapable of acquiring any. We have heard, and we see no reason to doubt the veracity of our informant, of parties who had but a slight and parrotted knowledge of the merest elements of school education; who were just capable of undertaking the humblest drudgery in an attorney's office—that of mere copying machines; and who, for incapacity in this, or from some more occult cause, were ejected from their three-footed stools, and cast upon the world as vain and unprofitable things. We have heard of such parties being scouted out of country places, in rags and quite pennyless,—of their arriving in the metropolis, and getting employment of an inferior kind partly by fawning and flattery, and partly in commiseration of their miserable condition, and want of intellectual resource; of their borrowing money in sums as low as a few pence, at the same time that they were labouring to undermine and supplant their benefactors; but we have never heard of their repaying one stiver of what they thus unjustly, and we may add, iniquitously, obtained. They continued, however, until all who knew them pointed the finger of scorn at them, and they were reduced to the necessity of either quitting the metropolis, or leaguing themselves with the pests of society. Some have done the one, and closed their lives in the fetters of a second sentence gang; and some have rusticated for a little, come into society again, and become opulent, with no more talent or rectitude than the others. This, it must be admitted, is singular, though true; and, therefore, the means by which it proceeds are worthy of being known. They are simply these:—the party does not trouble himself to acquire a knowledge of any subject; but he observes what is afloat, cons by rote a number of technical words and phrases connected with it, and then he is in a condition for "talking big," as the vulgar phrase has it. Thus disciplined for that craft, the object of which is to get money for pretending to teach others that of which they themselves are ignorant, he comes abroad into society, and the whole of his mind, such as it is, is devoted to what is called "humbugging" others—a practice which requires no science. They become expert and successful far more frequently than would be supposed. Long and loud speeches in private parties, are the artillery with which they open the campaign; and though these, like unshotted guns, are full of sound and fury but have no effect upon the solid matter of argument, yet they deafen the ears of ordinary people to the hearing and understanding of the truth, and the conclusion is, that because they are perfectly incomprehensible, they must be profoundly wise—perfect "*dungeons* of knowledge," as it were.

We act very liberally, and even charitably, to the human race, when we say that, taking the average of even those who have station and some consideration in society, for every one who seeks and sifts out the sense of ideas, there are nine who rest satisfied with the sound of words. These nine are very fond of a sounding speech, but have just as great an aversion to a sensible one. They prefer the sputtering at the hustings, or the spouting of parliamentary mouthmen, to the most logical, clear, and demonstrative speech of the foremost man at the bar; and they turn their mouths into ears in order to swallow the ravings of a fanatical pulpit-thumper, but are perfectly indifferent to the able theologian, who expounds the gospel doctrines "in demonstration of the spirit." We cite these as illustrations, because they are the ones with which the great body of mankind are most familiar; though the contrast may not be so glaring, the same holds true in every grade of society.

This is the portion of human nature to which the attention of quacks of all descriptions is chiefly directed, because it is the highway to credulity, and thence to the pocket. The quack, whatever may be his pretence, wins his way much more certainly than the man of understanding and knowledge. Only one out of the ten understands him; and as there is an air about him which clearly shows that he understands himself, the pride of the nine is roused, and they all dislike him. On the other hand, there is only one of the ten who can appreciate the man of sense, and the nine dislike him, and turn from him with aversion. The impostor can also afford to be the louder, and the more frequent of the two in his harangues; because he never has to study what he is to say; whereas, the ef-

forts which the man of talent makes to select the best subjects, and express them in the best language, often cause him to hesitate and stammer, and seem, in the ears of the majority, an inferior man to the merest ignoramus.

By words with knowledge, the one party makes every subject which he handles clear and comprehensible, while the other so darkens counsel by words without knowledge, that he makes his subject as incomprehensible to his hearers as it is to himself. The party to whom we directly refer was, and if alive, is, a perfect adept in the use of this "true no meaning," which "puzzles more than wit;" and thus he is the very tool to employ in the fabrication of joint-stock companies, the purpose of which is lucre, and the effect unknown or uncared for.

Such a party is incapable of taking the lead in the concoction of a railway, or any other work that has a physical and tangible result, how well soever he may be fitted to do the dirty work of others. With a joint-stock bank, especially where such establishments are not previously known, the case is different; and accordingly, it was to these the person referred to by our informant first devoted his attention. He had no more knowledge of the principles of banking than he had of the feelings of honour and gratitude—which was just none at all; but those with whom he had to deal were his equals in knowledge of banking, however superior they may have been in moral feeling. Accordingly, the first thing he did was to hash up a little tract about joint-stock banking; and this, though it was begged, borrowed, and stolen, from all sorts of sources, and most clumsily put together, threw a mist of authorship around the manufacturer, and did as well, and perhaps better, for those who were totally ignorant on the subject, than if it had been a first-rate book. This may seem rather a tedious matter; but there is valuable instruction to the public in pointing out the means by which ignorance and impudence contrive to usurp the places of merit, and its concomitant modesty. The book once produced, and put into the hands of those whom it was intended to humbug, very speedily did its work; and the conglomerator, whose impudence was always on the alert, instantly vaulted into a higher place of society, and not only forgot those who had befriended him in his previous misery, but forgot to pay a shilling of what he owed them. We suppose that when—and it must have been to his utter astonishment—he found himself beginning to be a great man, he bethought himself of that maxim which has helped many to wealth—"Base is the slave that pays."

What has been now stated made him known to a considerable extent, and this he laboured to render wider, by a curious but not very uncommon process among such parties. When he got domiciled in a semi-fashionable part of the town, he wrote letters to himself, sent them to all parts of the country, and had them returned with the respective post-marks, to the utter astonishment of the postmen and others, who marvelled that any one man, not previously known, should have so mighty a correspondence. This may seem an odd way of getting even notoriety, but fame is like the ascending vapour of water—that which comes from the dirtiest puddle rises as high as that which comes from the purest spring.

The instance which has been sent us, is but one sample out of a large stock, and that stock, and the project of which it began or aided the concoction, prospered well for a time. Still it was rotten at the core; that rottenness will ere long lay it prostrate; and many will be buried in its ruins.

It has been demonstrated, that many of the railroads, instead of yielding a return, will gradually eat up their capital; and railroad speculation has already paralyzed and crippled the legitimate trade of the country to a vast extent. The joint-stock banks were, in many instances, jobs and juggles themselves, and they facilitated the jobs and juggles of the railroads, and so must suffer in the suffering of those. Some of them already begin to shake, and the shaking will become general, so that they will hasten the fall of that whereof they promoted the rise.

Our correspondent does not say, and far be it from us to insinuate, that all railways, and all joint-stock banks, fall within this very questionable category; many of both are not only eminently useful to the public, but yield or promise a very handsome reward to the owners. This, however, occurs only in cases where they were really wanted; and experience shows that such cases do not form the majority.

When the joint-stock mania completely subsides, and each sufferer sits down to his lamentations like another Jeremiah, the very proposal of a joint-stock company, even for the most useful purpose, will be a matter of aversion. This stage of the malady has not yet arrived, but some of the more rabid symptoms have been mitigated; and few men now run to the share market, and purchase largely, without having first considered the why and the wherefore. This is the grand temporary objection which our correspondent perceives, and would remove; and we think the foundation upon which he rests his argument is a very stable one. "A joint-stock company," says he, "which has for its object the accomplishment of some really useful purpose, which can be obtained by no other means, and which purpose is pursued in a fair and legitimate manner, is a good and meritorious project at all times, and it is not worse when a large portion of the people are trembling on the brink of ruin from the effects of injudicious or dishonest joint stocks, than it is when no such calamity is felt or known; and, therefore, though people should be restrained by reasonable arguments from entangling themselves in joint stock companies during the mania, it may be necessary to argue in favour of a really good undertaking of the kind, after the effects of the mania begin to be felt."

In the opinion of our correspondent, these effects have begun to be felt already; but hitherto they have been what may be termed secondary, that is, they have appeared in other matters, and not in the joint-stock projects themselves. Most of these have, indeed, been under the necessity of making new shares, and bringing them into the market; and several also have borrowed money at interest. In as far as railroads are concerned, there can be no failure in the mercantile sense of the word; for should any of them be unable to go on, the whole speculation would be at an end, and worth nothing, there being nothing to dispose of but the engines and trains, and the old cast-iron, which would not pay the expense of a bankruptcy. But though there can be no direct mercantile failure of the railroad, the issuing of the new shares, and the borrowing of the money, are failures, in as far as the original plans and estimates are concerned; and though these have been produced by the ignorance and bungling of the projectors, the odium brought on the project is the same as if the work itself were faulty or injudiciously situated. These losses to individuals, and bad names brought upon works, have resulted from the employment of incompetent and cupiditous persons of the same general class with him, of the outline of whose character we have copied a few points. But none of them is quite so low in the scale, although much too low for the proper

execution of that with which they have been entrusted. Thus, in which way soever we turn, we find that the railways have been seriously injured, and the honest share-holders defrauded, by the employment of improper persons. Hence, some blame, or rather a good deal of blame, attaches to the House of Commons; that House is, of course, responsible for the acts of its committees, and if those committees, before they admitted into the House any bill for a joint-stock, or any other project, had thoroughly scrutinized the characters and capabilities of the parties, many millions of money would have been saved, and the works would have been better done than they have been under the present slovenly system. The House of Commons and its committees—which are one and the same—ought to have made those preliminary scrutinies, but they have not made them; and therefore they have been guilty of a fraud upon the country to the full extent of all the money lost by railway proprietors, and all the expenses of construction over and above the real worth of what has been done. Unfortunately, there is no redress as against the House of Commons for any injury it may do, whatever may be the parties injured, or whatever may be the extent of the injury. One cannot even expose the conduct of that House, where it converts its collective wisdom into distributive folly; for while it exists it is all-powerful over law, equity, and justice, it slips through one's fingers like an eel, or rather vanishes like the baseless fabric of a vision, whenever the decree for its dissolution goes forth. Even if the new parliament should consist of the same identical men, it is not the same identical parliament, for the dissolutions are like the transmigrations of oriental mythology, according to which, the spirit passes from one beast to another, without retaining a single trace of its former identity. Probably it is in consequence of this that the honourable House does so many strange things, especially in the matter of private bills; and if so, it is deeply to be regretted. For, if the House and its committees knew their duty and performed it, no improper person could defraud the public under a parliamentary sanction, and bungled works, and consequent extensive and ruinous losses, would be unknown. We regret to express ourselves thus of an assembly, which is understood to embody the spirit and the wishes of the whole British people; but, as this is the real root of the evil, truth and justice demand that it should be included in the enumeration.

We shall only farther remark, that the parties who bring disgrace and ruin upon joint-stock speculations, seem to partake in the sagacity which rats are said to evince, after having dwelt in an old house or barn till they have drilled its mud walls through and through. No

"Rats from off a falling house"

can make their escape more speedily than these projectors, or projector's fags, when the project shows the least symptom of instability. Indeed, they take particular care to make their profit by the scheme at the very beginning, and thus they are ready to escape at the first emergency, from the odium, the place, or the kind of occupation, according as may be necessary. When the rural joint-stock banks first showed symptoms of weakness and improper formation, some of the peripatetic agitators in the establishment of them scampered off to make railroads, mill-ponds, cesspools, or whatever might suit the quantum of engineering craft which they had gleaned in their bank bunglings,

"At Nova Zembla, or the Lord knows where."

Such is an enumeration of the principles which tend to bring, or have brought, odium upon joint-stock companies; and though they have filled up the full measure of their mischief, the mode of preventing them may be soon told: The parties should thoroughly understand the nature of the subject, its use to the public, and whether it is such as the public will pay for, so as that, at a fair expense for the use, the public will pay the whole cost of construction, maintenance, and management, and also such a profit to the proprietors as shall induce them, or other parties, to undertake other public works, whether of the same kind or different. If the result of any one of these turns out a negative, the project should instantly be abandoned, for there is no such principle of reciprocity among them, as that the good of one shall counterbalance the evil of another.

If, on the other hand, they all come out positive to the proper extent—and they are checks upon each other, the project should be entered into; but it is here that the difficulty arises. There has been so much mismanagement, loss, and disgrace, from the employment of improper persons, that there should be a thorough examination of those who are appointed. This is especially necessary in those closet and parliamentary operations which precede the execution of the works, and are, as it were, the almost invisible seeds of the whole matter. The engineers and architects employed do not imperiously demand such a scrutiny. They are men of much higher characters than projectors, parliamentary agents, and their inferior "tooters and fags." A mere novice has little chance of being employed in a costly work; and men of experience, having gained their characters by the approbation of the public, are not likely to forfeit them by disregarding this approbation. Thus it is the men of the particular scheme—the contrivers, agents, and directors—that require looking after; but who ought to do this according to law, and who are capable of doing it according to sound principles of equity, are points that demand separate inquiry. One thing is certain, however; the more that the whole operations depend upon engineers and architects, and the less they depend upon anybody else, the better. For, if numerous and complicated proceedings are necessary, besides the labours of the scientific men, we know not how jobbing can be altogether got rid of. The projected roadway along the Thames, appears to be very free from these sources of jobbing. There is little or nothing to be bargained for, and therefore there can be few improper bargains entered into for favour. There are no hidden works, such as may occur on a railway, and cannot be foreseen, for the whole is open to observation, and every shilling of the expense must be estimated before-hand, and the capital so adjusted to the cost as to require no alteration. These are great advantages, and render a joint stock for this project as certain a bargain as the purchase of goods in a warehouse.

Since the above was in types, we have received the particulars of the expense, but with an injunction not to publish them in the meantime, as that might enable those unprincipled underlings, which are always on the prowl, to batten on the brains of others. Of this we see the force, and should only add, that the total expense will not exceed three fourths of that estimated for the bridge proposed from Pedlar's Acre to Hungerford stairs,—which proposed bridge would lead from nothing to nothing as a carriage road, and find but few to use it as a foot-way. It would, therefore, be unfair to the proposed roadway, to assume that the toll on this bridge would yield a twentieth part of the toll on that. Consequently, if the profit on the bridge were 1 per cent., that on the roadway would yield 26⅔ per cent., and so on in proportion. Either, therefore,

the very idea of the bridge savours of madness, or that of the road-way is one of the best joint-stock schemes ever suggested. There can be no rivalship between them; and so we are decidedly of the latter opinion.

THE PROSPECTS OF THE ARCHITECTURAL PROFESSION.

ARCHITECTURE is the only profession in which men are expected to give the result of their study, observation, and experience, without even a prospect of remuneration. Yet such is the present condition of the profession, resulting from the spirit of competition, which has, during the present century, swayed all classes of men calling themselves architects. The system had its origin in the profession, and the public is not to be blamed for accepting a proposal so much, and so evidently, to its advantage. But if architects are willing to expend their time upon designs and drawings for competition, they have a right to insist that the parties selected to judge of their respective merits shall decide with fairness, or, in other words, be uninfluenced by private partialities and friendships. They have on no occasion a right to complain of the incompetence of their judges, for when the proposal is accepted it must be supposed that the conditions are approved, and that the parties concerned are willing to leave the decision of their relative merits to the persons by whom the competition is proposed. There is, therefore, but one condition to which the judges tacitly bind themselves, and that is, to decide without partiality. Those who are unsuccessful, ought not to attribute their failure to the incompetence of the committee with whom the selection is left; and to indulge in any bitter reflections upon their destitution of judgment or taste, is the best evidence of a disappointed mind. But, if in any instance it can be proved that the judgment of those who have selected the successful design has been warped by interest or partiality, he who exposes the dishonesty, serves the profession and performs an important public duty. It is difficult, we know, to assert, in any instance, that a design has been chosen on account of the private interest of the successful competitor, and yet we are firmly persuaded that in ninety and nine cases out of a hundred there is every reason to believe this is the case. When the prize-man has on the committee a father, a brother, or a bosom friend, is it possible to doubt that he has succeeded by the influence of his friends, and can we come to any other conclusion, when we know that he has solicited, personally, and through all who have had an interest in his success, the votes of those with whom the selection rested. The writer has had for many years past an opportunity of observing the mode in which competitions have been conducted, and their results, and it may not be uninteresting to the reader if he state one or two instances of that evident unfairness, which has induced so many respectable members of the profession to decline all competitions.

A few years since a proposal was made to the profession for a competition, when a large public building was to be erected. More than eighty drawings were sent, and upon the lowest calculation, the time occupied in the preparation of each set of drawings must have been two months. A great display of fairness was made, and a certain personage, one of the court, declared that so great was his abhorrence of all partialities, that if he were solicited by any person for his vote he would vote against him, even although his drawings were preferable to all others. But what was the result? The father of the architect who was chosen to erect the building, was a member of the board, and by another member of the court I was informed, that a gentleman who had received a prize, was so industrious in his canvass for votes that to him, personally, he became at last almost offensive. The many and glaring defects of the building to which I allude have been often pointed out by the profession, and are now well known to the public.

In a still more recent competition in the city, two of the competitors entered the lists with all the circumstance of an election, in which the individual merit of their works was to be altogether forgotten, and the whole question was to be decided by interest. This competition was witnessed with great disgust by the profession, and by the public at large.

It will scarcely be believed that the determination of competitions is now so entirely a matter of interest, that architects, or I should rather say, a certain class of architectural toymen, attempt to defend the adoption of any means by which interest may be secured. I know of instances in which the perspective views of competition designs have been lithographed, and not only sent by the architect to every member of the committee, but sent by mutual friends who have had influence over the votes. Nor is this an uncommon practice with a certain class of architectural jobbers, with whom any act which may aid their object is fair, and who, lost to every feeling of modesty, have become the slaves of a mercenary and grasping spirit, which has already covered them with the reproach and contempt of every honest man in the profession.

Such is the mode in which competitions are conducted in the present day, and to the same system every individual must bend who attempts to obtain public engagements. I do not assert that a honest decision is never given, but I am satisfied that it is rarely the result. Those architects in the present day, who have a private practice, may retain their stations as professional men, and men of integrity, but what is to be the condition of the profession a few years hence? We do not fear the assertion, that if some radical change be not made in the system of competition, architecture will become as injurious to the moral character of its professors, as the profession of law, which but few men can practise, as is well known, without a loss of conscience, and the higher moral feelings, proportional to the extent of their engagements and the amount of their gains.

To correct the evil which now exists, and which threatens the ruin of the profession as an elegant and liberal art, some immediate remedy must be applied: that remedy, whatever it may be, must entirely change the present mode of competition. A plan must be devised, by which drawings can be presented to a committee without the possibility of their authors being known. This might be easily done; and we will suggest one mode. Let the first condition be, in every case, that no writing shall be introduced upon any plan, section, or other drawing. Let the committee with whom the decision is to be left, then choose from among their number, as chairman, some man in whose independence, integrity, and zeal, an entire confidence can be placed, and delegate to him the subsequent arrangements. Before the time for the delivery of the drawings, let him prepare a paper, on which he can enter the name of every architect, and the number by which he is to claim his drawings, when the committee has selected the design which seems most appropriate.

But if the number given to an architect were attached to his drawings, an opportunity would be immediately offered for the exercise of patronage. My number, an individual of the class I have already described, might say to his friends, is thirteen; have the kindness to solicit those whom you know upon the committee; and thus the best intentions of the board would be frustrated. To prevent this, let the chairman affix to each name a mark, or some other number higher than the highest of those given to the architects, and attach this to the several drawings. As soon as possible after this has been done, let the paper containing the names, numbers, and marks, be sealed up with the seal of the company, or some other public stamp, and be then deposited in a secure place, from which it cannot be removed until the choice has been made. The members of the committee must now come to the decision without bias, if they have not seen the drawings during their preparation in the offices of the architects. To prevent the possibility of deception in this way, the chairman should be empowered to put the question to every individual.

To compel the adoption of some such arrangement as this, is the business of the profession, by refusing to send drawings under any other conditions. In this way, the profession might be restored to a more healthy state, and the individual members would be benefitted not less than the public.

A Competitor.

FRONT ELEVATION OF MANSIONS IN LOWNDES SQUARE.

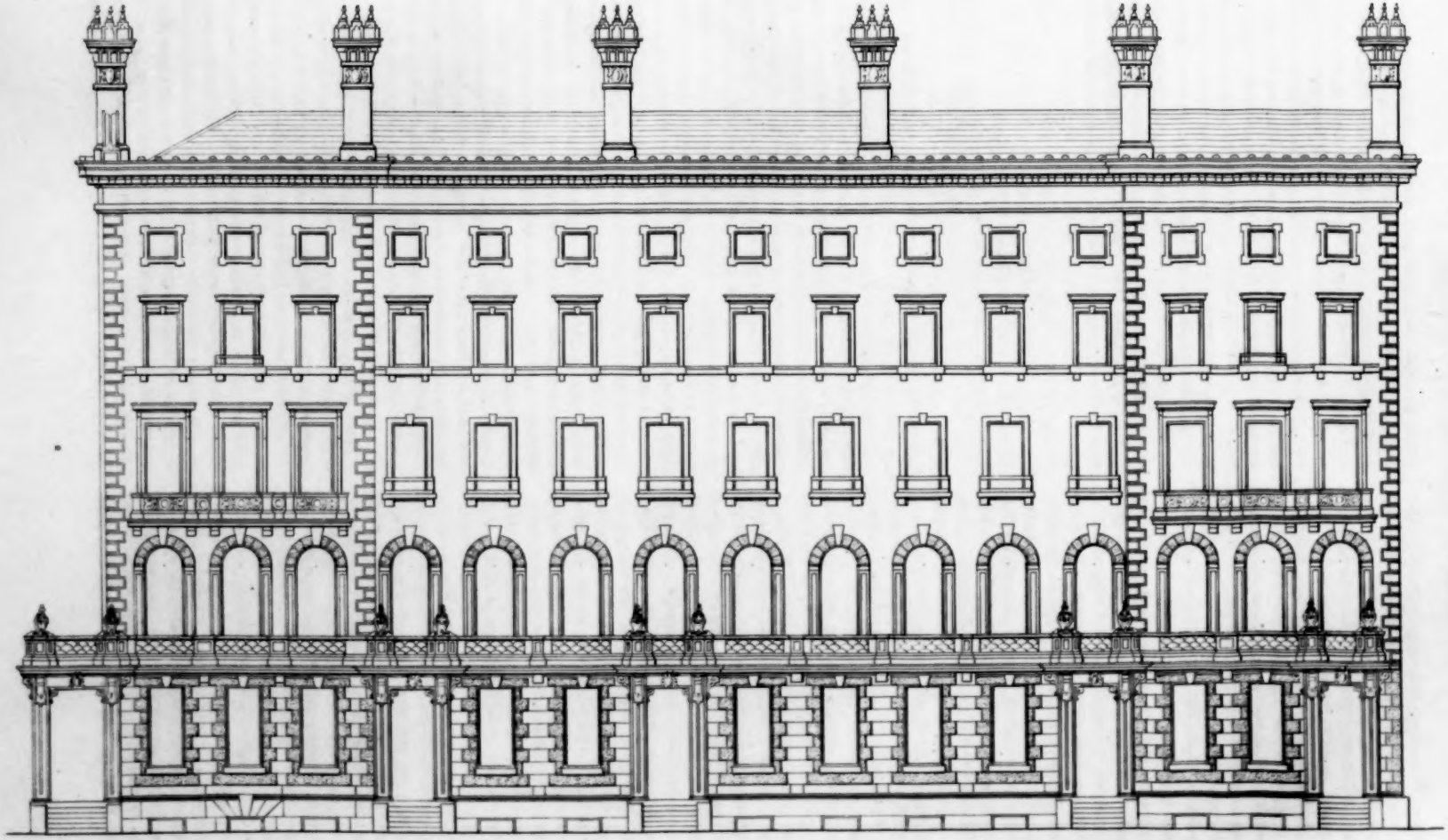
SUBJECT OF THE PLATE.

As will be seen in the engraving, this building contains five mansions, of ample size, and fit for the accommodation of the higher classes of society; but the taste of the architect, Mr. Lewis Cubitt, has so managed them, that, even at a very short distance, they appear as one magnificent palace, richly, yet tastefully ornamented, and greatly superior to anything that has previously been erected in the vicinity of London. They are, in fact, the first houses in which the chaster part of what is called Elizabethan architecture, is harmoniously blended with the Tuscan; and the result is rich, chaste, and classical—at least in the proper sense of the term, and not confining it to the merely pillared or pilastered structures of what are usually termed the classical nations and ages. In a public building, where people may be supposed to pause a little for congratulation or converse, before they enter, and after they come out, a portico with columns is not out of character; and may, perhaps, be the neatest shelter under which people can enjoy the free air, and be protected from the weather. In a dwelling-house, even of the most costly description, and more especially if civic or suburban, columns and pilasters are quite out of place, in such a climate as ours; and even when they support a porch at the entrance, they are degraded from their importance in the ancient edifices, and thus look mean and paltry: in the ancient structures, the columns are the principal, and, indeed, the only parts of what answers to the outer walls of a mansion with us; and as close houses are always necessary for us, columns or pilasters cannot be made to harmonize with what we feel to be the essential parts; hence they always appear to be useless, and nothing which expresses this can be in good taste. If they are raised from the lowest visible part of the walls, whether on dados or without, and carried up to the architrave of the finishing cornice at the top, they must be of excessive and clumsy diameter, or else they will have the appearance of lanky poles, which have been drawn up in the confined air of a close thicket. Then they stand in opposition to the proper wall, which shows itself in the intercolumniations, and contains the windows; for the columns, or pilasters, if they have any meaning, imply that the mansion, whatever it may be, consists only of one story; and thus is, or ought to be, one great hall, or other place devoted to public purposes; but the windows give a direct negative to this, and point out expressly that there are as many stories as there are rows of windows above each other, and that, therefore, the building, in the only part of it which harmonizes with the climate of Britain, is a dwelling-house. These two expressions, the one given by the pillars or pilasters, and the other by the intermediate walls and windows, are perfectly incongruous; and no art can so manage them as to make it appear that the structure is devoted to any one particular purpose. When the columns or pilasters are raised on a basement, to the top of which no spacious outside stair ascends, then the effect is still worse, because the inutility of those "stuck on" excrescences is still more apparent. *En passant* we may remark that, from the portion erected, Mr. Cotterell appears to have fallen into this sin in the new building for the Sun Fire Office, though not so grievously deep as Mr. Hardwicke, in the abortion of Goldsmiths' Hall.

One circumstance which conduces much to the unity, and therefore to the beauty and perfection of the front of Mr. Lewis Cubitt's buildings, as shown in the plate, is the fact that they present themselves to the eye and to the mind simply as dwelling houses, and thus the observer is not left to ponder between use and use, like the ass between two bundles of hay, as he must do when the structure before him presents two faces under a hood. This is getting rid of the grand incongruity; and then it remains only to adapt the ornaments tastefully to the size and purpose of the mansion, and all will be in perfect harmony and keeping. In order that much ornament may be appropriate, the building must be large, for if it is very small, these ornaments make it smack of the pastry cook, and one's mouth yearns for a taste of it after dinner. Even though the mansion is large, it should not be overlaid with ornaments, because that makes it look like a porcupine, or lady furbelowed, flounced, frilled, gaffered, and padded all over, till she looks like a hen careering before the wind on an April day. In all ornaments, and more especially architectural ornaments in cities and their suburbs, where every hollow catches dust and ashes, the greater part should be in perfect repose, and the classical ornaments come out with proper effect; whereas, if the walls are belumbered over with them, they put one in mind of the sea in a storm, or of a pool in commotion, neither of which is a very classical idea. A careful examination of the plate will show how well Mr. Cubitt understands, and how carefully he has followed out, this grand art of producing beauty in the buildings which we have noticed. Where there are ornaments, they are elegant and nowise gaudy, and then there is sufficient breadth of repose between one and another. This is exactly as it should be, inasmuch as, when we come sufficiently near to scrutinize the details of any one ornament, that ornament ought to occupy the whole field of our contemplation, without the intrusion of any other; and thus the mind can be devoted to it without any distraction.

In like manner, when we examine the whole of an architectural composition with its ornaments, which must be at such a distance as

MANSIONS IN LOWNDES SQUARE, KNIGHTSBRIDGE.



Designed by Lewis Cubitt Esq.

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Engraved by I Dower

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that the details of these cannot be seen, the composition should present itself to us as a perfect whole. Thus, for instance, Mr. Cubitt's fine mansions tell well, and as one, to the eye; but if there had been fifty of them in a row, they would have had a very inferior appearance; and the fact that we were seeing only a part, would have spoiled the pleasureableness of our contemplation.

In this elevation Mr. Cubitt has produced a model; and one which ought to be imitated, though with variations, as a merely servile copy is a contemptible thing. Of the details we shall not now speak, neither shall we advert to the interior arrangements and decorations. In our next number we intend to give a ground plan, at least of one principal floor; and then will be the time to enter into a regular examination of the mansions, which we purpose to do at some length, with the co-operation of those who know more of the niceties of such matters than we can pretend to.

THE HOLBORN LINE OF STREETS, AND HOLBORN BRIDGE VIADUCT.

The line of Holborn and Newgate Street is one of the greatest thoroughfares for ordinary traffic in the City of London. It is the great channel of communication between the principal shopping districts of the West and the East; and it is almost a straight line from beyond the West End of Oxford Street to the further extremity of Mile End. There is no street in the metropolis, of half the length, so nearly straight; and besides this, it is the grand central street dividing the buildings into nearly equal portions, the one on the north, and the other on the south. It passes near to all the Inns of Court, and with the exception of the Temple and some of the minor Inns on the north of Fleet Street, it is the line of way from which they are most accessible. Besides this, there is no great thoroughfare in London into which so many cross streets enter; and, with the exception of a few spots which might be easily altered, it is a wide street throughout its whole length. From all these circumstances taken in conjunction, one would naturally suppose that this line would be attended to by the authorities of both London and Westminster, with more than ordinary care. But the fact is exactly the reverse: the part of it which lies between Oxford Street and the straight part of Broad Street, St. Giles, is crooked, narrow, and inconvenient. The neighbourhood, it is true, is not the most respectable; but that is no reason why the thoroughfare should partake of this local character; for surely if the locality is a bad one, decent people should be allowed to get across it with the greatest speed and facility. If this part could be altered so as to continue the line of Oxford Street until it ended in High Holborn, and if High Holborn were widened, eastward, to where the buildings, on the south side, begin to make that street so dark and dirty, the direction and width of the street would be unexceptionable, until the Middle Row were arrived at. But this Middle Row is a block of unsightly buildings put down actually in the street, converting a part of that into abodes of very questionable character, and rendering the rest of the neighbourhood foul and unsightly. This block of rubbish ought instantly to be swept away; and the improvement of the situation by the removal of it, and by the alteration of St. Giles's, would more than cover the expense.

Thus far the cost of the improvement would in the first instance fall upon Westminster; and it is a shame to the multitude of wealthy persons there collected that this has not been done already.

At Holborn Bars, a very little to the eastward of Middle Row, the jurisdiction of the city commences, and as the corporation have a regular committee for building purposes, this committee ought to look after the remaining part of the line. We may remark *en passant* that strange opposition is sometimes made to London improvements; as is proved by the recent case of the University of Oxford, which, having a few paltry houses somewhere about Lad Lane, has applied to the Rolls, and to Chancery, either to prevent the taking down of any portion of these houses, or to secure to that learned body the advantage arising to the said houses from the improvement. His Honour decided against them in the first instance; and the Lord Chancellor has dismissed their appeal with costs. In this, his Lordship has acted with great equity; for, occupied as the University is, or ought to be, in improving the moral and religious ways of men, it ought to leave the improvement of the physical ways to the common and carnal world, lest, by showing too much avidity after lucre, it should taint that high and holy character, to which it has, or ought to have, such strong and supereminent claims.

But to descend to Holborn—which is a fearful depth below the taste and the towers of Oxford, we are constrained to remark that when we get upon the city part of the line as far as Hatton Garden, a fearful gulf of deformity and danger gapes, wide enough to swallow a score of drays and coal waggons, and not only a countless rank of omnibusses, but *omnibus rebus*.

This is Holborn Hill, which even now is as incongruous with the improving state of the city, as it was when Fleet Ditch ran—yeasting to the moon, redolent of dirt and drowned puppies, and wafting its *unfavonian* odours over all the neighbourhood. Mighty mother of Hockley in the Hole, of Cow Cross, of Field Lane, and countless other abominations, many of which yet stew and stink in their hereditary iniquity, thou art now hidden under an arch, and consigned to murmur and mourn in the rat-holes, until the whole of thine unclean *rejectamenta* pollute the Thames as heretofore! But the gulf still yawns over thee; and by this means Holborn sink, as it may justly be called, is a place of great danger to man and beast, and an equally great disgrace to the London corporation. From Hatton Garden to opposite the Saracen's Head in Snow Hill, is a length of some 1200 feet, and the point of depression over Fleet ditch is about 30 feet lower than the extremities. The slope of Skinner Street is bad enough; but still it can be to some extent worked in traverses. The opposite slope, that of Holborn Hill, is, however, a perfect abomination; for, independently of its steepness, it is narrowed and twisted as if the express object had been to make it as ugly and as dangerous as possible. Probably this was the intention; for the inmates of the immediately adjacent sinks can empty pockets under the charitable cloak of lifting up the fallen; and in respect of the number of horses which get their knees broken, or themselves more seriously injured, in this filthy place, it may have been intended as a trap for the benefit of the "knackers" of Cow Cross and its vicinity, who purchase these half-murdered horses, work them as long as they can exist without food, and then boil up their carrion to gladden the maws of the toms and tabbies, in order that their nocturnal chants upon the house-tops may sing the citizens to sleep in more fervent tones. Various proposals—and most of them not very wise ones, have been brought

forward for obviating this abomination, a measure which is called for by the most imperious necessity. The quantity of horse power lost, and the number of horses destroyed on this filthy hill, in the course of a single year, would go far in paying the expense of a safe and commodious road. It seems, however, that there is a stultification which conglomerates the wits of most of those who speculate on city improvements, for the propositions have generally gone to the changing of the line, or to the destruction of this part of the street as a place of business. Both of these, and more especially the last one, are excessively bad; for when the New Street is rendered passable to Islington and Pentonville, this will form by far the finest north and south thoroughfare in the metropolis. From the concentration of all the southern roads in one line at the Elephant and Castle, onward to this very point, the line of street is ample and free from danger; and we hope there is no reason to fear that the northern continuation will be worse. Therefore this should be one of the most important crossings for business, and for this reason, it should not be raised an inch above its present level. It is an excellent maxim in all cases of improvement, to preserve the previous good, either wholly, or to the greatest extent possible; for, destruction is always in itself an evil, whatever good may come after it.

A plan of a viaduct, which will get rid of the hills in all necessary cases, and yet preserve all the good, now lies before us; and we say, with pleasure, that the general idea does great credit to the talents of Mr. Galloway, the engineer, and Mr. Mullinger Higgins, the architect, though we have some suggestions to offer as to the details.

Farringdon Street, and its continuation northward, may be about ninety feet wide: and, it is proposed, by cutting off a few obtrusive deformities, to give Holborn Hill a width of eighty feet. This they propose to divide into three parts, namely, thirty feet along the centre for the viaduct, and twenty-five feet on each side for a carriage-way and foot-pavement, in order to preserve the efficiency of the place for business, as well as form a communication with the cross street either way. There is no question that this is the plan —the only one which will secure all the good at the same time that it removes all the evil, and therefore all that remains must relate to the mode of execution.

The sketch before us shows one arch of some 30 feet span, opposite the middle of Farringdon Street, which is to be the outlet for the thoroughfare both north and south. All the rest of the line is to be supported by small arches, the entire structure being of masonry —brick or stone, as may be. Now, there are these objections to this kind of structure:—seen from the north or south, it will appear a sally-port at the end of a street in a fortified town; it will render the passage of persons on foot both inconvenient and dangerous, as they will have to proceed some 30 feet in obliquity from the north and south pavements, and will not know what may be coming immediately against them on the other side; and it will be very expensive, without any countervailing advantage. We may farther add, that it will darken the shops and floors over them, especially those at the bottom of Holborn Hill.

Now, all these evils may be obviated by the adoption of suspension arches: of these there ought to be two, with the middle towers exactly at the centre of the crossing; and the span of each arch may be 400 feet, leaving only 200 to make up at each end, and the greatest height of that not more that 12 feet, or between 5 and 6 in the greatest part of its length. The middle towers at the crossing might be raised on three substantial pillars on brick or stone, with a strong entablature on the top for supporting the cast-iron towers and roadway. In appearance, this would have many advantages over a structure of masonry. A great length of street would be seen through it any way, and the central pillars and towers, together with the balustrades, could be rendered highly ornamental—a great improvement to the street, instead of an unsightly incumbrance. But, in respect of utility, it would be far greater. The pillars would form a safety to foot passengers at the crossing; the lower street would be clear in all directions for 400 feet each way from the pillars; for the whole of this length, the light and air would be as free as they are now, and then the trifling height of the abutment parts would occasion little interruption.

As for the roadway, it ought to be divided longitudinally into two equal parts, separated from each other by a railing, and by one of the arched chains, of which the bridge ought to have three; this would divide the roadway into one solely for the passage eastward, and another solely for the passage westward, which would prevent all collision of the omnibusses and other carriages; and thus this crossing would be changed from the most dangerous in London, to one of the safest. Indeed, if the carriages were kept each to its own side, foot passengers could mingle with them without any danger.

After these, there will remain what many may consider as the greatest advantage of this introduction of suspension arches:—the cost may, on the average, be taken at about one ninth of what it would be if of brick masonry, and a still smaller fraction of what it would be if of stone; and yet, with this great reduction of cost, its strength and steadiness, and also its durability, will be superior to the other structures.

The fact is, that suspension chains, constructed in exact conformity with that plan for which Mr. Dredge has taken out a patent, is one of the happiest, most economical, and most beautiful applications of a staple article of native produce and manufacture, that ever was made in this country. From the abundance of our iron, and fuel for smelting and working it, and the great progress which we have made in every process, our iron may be considered, whether cast, malleable, or converted into steel, as an inexhaustible stock, from which we could readily supply the whole civilized world. It is true, that want of knowledge on the part of our legislative and other leading men, and the necessary consequence of applying false means for the production of true results, have, as it were, compelled other nations to do their best for rivalling us in this grand element of our national wealth. Our patent laws are either an unmeaning letter, or they tend to mischief. Our regulations of export have prohibited finished articles from being sent out of the country, but they have allowed models, and workmen, and tools to be so sent, which is saying, in other words, "Go and make works in iron for yourselves, and we promise you every assistance;" and by these means, together with many others that we could mention, they have paralyzed our manufacture of iron, and had it not been for its inherent power and advantage, they would have destroyed it altogether. The country is therefore under great obligations to Mr. Dredge, and other talented individuals, who contrive to make happier and cheaper applications of iron than any that have previously been made; and we must say, in so far as the suspension arch is concerned, that this gentleman has placed it on sound principles, which is the first and greatest step towards perfection. As we have stated again and again, a suspension chain

of the previous construction, that is, of equal weight throughout the whole length, contains in itself the certain element of its own destruction. The Menai bridge is a splendid but melancholy instance of this destruction; and it were easy to show that upon the plan of that, the larger any bridge were, it would always be the weaker; whereas, with chains formed, and the roadway attached, on the plan of Mr. Dredge, there is no such danger.

In very few instances indeed has an arched bridge of any kind been broken down by the weight passing over it. The grand cause of destruction is the vast weight of materials which are accumulated in order to make the bridge support itself; and in most cases, such a structure is supported by the strength of materials alone, and not by any science in the construction of it. Take London bridge, for instance, which is perhaps the best of our stone bridges in materials and workmanship, and it has some thousands of times the weight of materials which would be necessary in an iron bridge of equal span, and equal strength against the transit of loads. The Holborn viaduct, which has led us to make these remarks, is a work in which the introduction of iron suspensions will be attended with far more advantage, than in a bridge across a placid river like the Thames; it will leave a great part of the street below it free, it will throw little shadow, and will be light and elegant as compared with the clump of bricks or a quarry of stone mounted aloft in the air.

If, however, those concerned shall have their good taste and good sense so much about them at the time as to save their money and adorn this crossing by such arches, they will confer a much greater favour upon the public generally, than they themselves would perhaps readily supppose. That such arches are an immense improvement, is known to all who have any knowledge of the principles of them, but these principles are known to few; and very many of those who have name and influence as architects and engineers do not belong to the number. Not only this, but they are wedded to the present systems, and generally more attached to the objects of their admiration and care in proportion as they know less about them. Therefore, in addition to its great comparative cheapness, and its local advantages, which will appear the more numerous and important the closer it is studied, this viaduct would be an example to all the country, and an example that could very easily and cheaply be followed. We have already said that the expense of an arch of this kind would be only one ninth of an equal one of equal and even inferior durability, for even a wooden bridge, which is a most perishable structure, is at the same time a costly one. This is well exemplified in Battersea and Putney bridges, which are perhaps at once the ugliest and most unscientific bridges in England, and yet each has cost nearly as much in repairs as would have paid for two new bridges of handsome form, and durable materials.

These remarks may seem somewhat anomalous to the viaduct on Holborn bridge, but besides the local advantage of that, there is a general lesson to be taught to the public; and such lessons are more willingly learned when they come in collaterally, than when they are given dictatorially as a species of lectures. We are aware that the adoption of these arches would lessen the profits of the engineer and the architect, and we have heard that there are some professional gentlemen mean enough to conceal this, and at the same time make it a strong ground of opposition; but we are sure that Mr. Galloway and Mr. Higgins are too high and honourable for being influenced by any such motives.

ROYAL PARKS, AND THEIR IMPROVEMENTS.

The royal or public parks adjacent to the British metropolis, are, from their airiness, the admiration of all intelligent foreigners; but it is only of late years that they have begun to be decorated as they ought to be.

Hyde Park occupies the dryest ground, and is upon that account the most healthy of the whole; but it is at the same time the most unornamented and slovenly in appearance. Its very decorations, if decorations they can be called, consisted of planting of Dutch elms in avenues, straight lines, and clumps, many of the avenues leading to nothing, and all of them incongruous and the very reverse of being ornaments. Formerly, too, it was enclosed by a dead wall; and though the greater part of that wall has now given place to railing, and more expensive if not more tasteful lodges have been erected at the entrances, yet the railing only shows more clearly the total want of taste in laying out the park itself. The elms to which we have alluded have stood so long, that they are dry-rotted in the timber, not in the boles only, but in the principal branches; and when the wind blows a violent gale, large limbs of these ugly trees are broken off and blown down, to the great danger of those that may be passing at the time. The worst part of the whole, however, is the water, or that which is termed the Serpentine, though it bears no resemblance to the form of a serpent in progressive motion, because it consists of only one curve, and that a trifling one, and one of no taste whatsoever. Then, the water itself is such as ought not to exist in the neighbourhood of a great city, and especially in that of a Royal Palace. The great fault, however, is in the unequal depth of the water, which unequal depth renders the place highly dangerous. This same Serpentine is the only, or at all events, the principal skating field during the winter frosts; and the ice over the deep pools is always thinner and more tender than that over the general bottom, so that unwary skaters fall in through the tender ice, when the rest is strong enough for bearing a crowd. This is almost certain of taking place if the ice is covered with a powdering of snow, or with thick hoar frost, which is generally the case in the vicinity of London. To adapt this for a proper skating field, the water ought nowhere to be deeper than two or three feet; indeed, the shallower it were it would be the better, provided it were just deep enough to keep down vegetation. The bank over which the waste water flows, is about as tasteless a piece of bungling as can well be imagined. It is meant to represent a water-fall, or at all events a rapid; but it has no resemblance to a natural one; and the expansion which receives the water at the bottom is the very type of a cesspool.

This total absence of taste in the park itself, renders the gates, which are neat and costly enough, if not tasteful, most ludicrously incongruous. One enters by a showy gateway in an open colonnade, and meets with dirty and ill laid-out roads, clumsy palings, and a great lump by way of statue, the very sight of which makes the crows "about ship," and stand off in a contrary direction.

There is another fault in this park: it belongs to nothing, and therefore it has no meaning to give a park, even a public one, the proper finish and character; there should be a pavilion or mansion of some sort or other, to which it seems an appendage; but the most conspicuous, if not the only buildings in Hyde Park, are the receiving-houses for the Humane Society, and a small barrack built in the ugliest style imaginable; so that the only subjects

which one is put in mind of, are half drowned bodies, and soldiers' trowsers, pipeclayed, and hung out to dry; the last of these is in as bad taste as possible, and must form a perfect scarecrow to the damsels of the West End, as they trip it over the green-sward. The receiving-house again is a perfect abomination, for it stands rubric to the facts, that people bathe where it is most indecent to do so, and that the water, which ought to be perfectly safe, is highly dangerous. It were to be wished that the schoolmaster would "come from abroad," and take up his dwelling here for some little time:—first, to birch with all his might every one attempting to bathe; secondly, to make the waters perfectly safe, and knock down the receiving-houses; and thirdly, to kick the barracks over the railings, and make the park worthy of its situation.

It is understood, that our most gracious Queen entertains a project for the improvement, or at least the alteration, of a portion of this park. All the buildings to the left hand, in proceeding down from Hyde Park Corner, are to be removed, as far as somewhere about the Cannon Brewery, but they ought to be removed the whole way out to the barracks. Then, directly opposite the entrance into Lowndes Square on the other hand, she is to have a gateway erected, and named as a memorial of her love and affection for her Royal Consort. This is as it should be; and as the new gateway will directly face Mr. Cubitt's houses, which form the subject of our plate in this number, it will give them about the best situation at the most westerly West End. We may also remark *en passant*, that the builders are to carry up superior structures as far as the Knightsbridge Road, just fronting the gate, which, if properly done, will be in excellent keeping, and show that at least one gate of this park leads to a decent place. The park corner gate, at the end of Piccadilly, leads from nothing to nothing, or the next thing to it—that is, it leads from the naked statue with the shirt and the pot-lid, to the lone and widowed gateway adjoining the Green Park; for Grovesnor Street is so much lower than the made up ground, that it looks a sort of *facilis descensus* alley, down which one fears to go. The other gates are mere wickets, and placed in the very worst situations possible.

In so far, therefore, as the new gateway is concerned, it will not be unworthy of the Prince whose name it is to bear; but one wonders, and in part fears, what is to be done with the ground to the east and west. The houses and ground, at least those to the east, are the property of the dean and chapter of Westminster, and that monastic body—they belonged to a mitred abbot, and not to a bishop—are to sell this to the government, at the best price they can get. This is highly liberal, and makes one believe that their refusal to admit Thorwaldsen's magnificent statue of the illustrious Byron into their penny show at the abbey, must have been a momentary hallucination, or the shadow of the raven's wing of Sathanas passing across them at the time. How self-denying, how noble, and how generous this will be, as compared with the attempt of that broader eye of ancient glory, the university of Oxford! That super-docted conglomerate of many corporations, owns, it seems, certain old houses in Lad Lane, which have been deemed necessary for the improvement of the city of London; and reference is made to them in the Act of Parliament: accordingly, a portion only is wanted for the street; but the lopping off of this portion will be a great advantage to the remainder. Now, like good stewards, the University have endeavoured to drive their pigs to the very best market. They, of course, will demand the utmost farthing for the space wanted for the street. In supplement to this, they have moved Sir Charles Wetherell, who, having moved up his galligaskins, moved the Lord Chancellor to grant an injunction, restraining the city of London from building upon, or otherwise using, or selling, or disposing of the remaining ground occupied by the houses in question: but the improvement of the remainder is one of the principal sources out of which the expense of street improvements must be paid; and therefore Lord Cottenham refused the injunction with costs, and sent the learned doctors with a flea in their ears back to their native towers, thence to issue with their loins girded with sackcloth, and their heads powdered with ashes, and sit down to their Jeremias in the bowers of the Ideis—*super flumina, &c.*

Thus, there seems no question that the ground will be obtained; but the grand question is, what is to be done with it after it is got. Rumour says, that the Marquis of Abercorn is to build a splendid mansion upon the site of what once was the Cannon Brewery, but whether he is to have any of the ground behind, and if any, how much, is not even mooted, at least that we have heard. From the inequality of the surface, and the fact of the water from the Serpentine passing through this part of the ground, it is susceptible of a great deal of ornament; and on this account we wish the improvements a happy deliverance from the Huns and Vandals, who have mangled so many of our public works, under pretence of improving them.

After Hyde Park, the *Green Park* and *St. James's* are scarcely deserving of notice. St. James's, considering that it is very nearly surrounded by buildings, and has the abomination of Buckingham Palace—that pitiful specimen of pastry-cook architecture—at the one end, is tolerably well, only it wants a light and elegant bridge across the water, about the middle of its length. We hope, too, that the Green Park will be better,—indeed, it cannot be worse than it was before; but the ranger's house in it is about as ugly as the worst taste can desire. The undulated surface of this park, small though it be, should enable parties of taste to make it pretty; but if it has not been done already, one preliminary step is to get rid of the smoke-trap at the north-east angle, which is intended to purify a supply of water, and nobly accomplishes its purpose, by allowing the water to settle till it gets rid of the silt of the Thames, and acquires a mantling crust of coal tar and various salts. If water for the use of the Londoners must be purified from its native mud, there is no reason why the said mud, or something worse, should be again mingled with it before it reaches the consumers; and they actually receive it more offensively contaminated when it issues from the pipes, than when it is taken up originally from the river.

The *north-eastern park*, or green, is only in embryo; but we may as well notice it as a thing which, according to the phrase in the grammar, is "about to be;" but we fear there is neither room nor money left, to make it anything like what it ought to be. Still however, it will, whatever it may be, afford more delectation to the saints of Spitalfields, than walking in the marshes by the river Lea, and making their tiny bodies more feeble by incipient agues. Some drainage is wanted in this quarter, which used to infest all London with marsh miasmata; but how this drainage is to be applied is rather puzzling, seeing that the marshes and winter floods extend over so great a surface, and the outfall of the Lea is naturally so bad, and every year becoming worse by the silt which that river brings down, and the Thames throws back at the point of confluence.

While adverting to the smaller parks, a little wonder may be expressed that there is nothing of the kind on the Surrey side of the river. Kennington Common is a piece of open ground, but it is in as bad order as such a piece of ground can possibly be, and besides, it is the resort of profligate idlers all the week, and of field haranguing men, with their usual train of the lowest pickpockets, on Sundays. It is not under the control of government, nor, indeed, of any one else; and thus it is in a state of utter neglect, without a tolerable fence, a single inch of walk, or even a bush. It might be an infringement on what is called the liberty of the people, to put it in something like decent order, and appoint keepers to look after it, and more especially after those who frequent it; but the liberty of commons near great towns is always licentiousness; and the unthinking are demoralized under the specious pretence of taking the fresh air. Kennington Common is now much too small for being made a tasteful promenade for the dense population which surrounds it, and one regrets this the more, that only a few years ago a large portion of the ground between Walworth and the new Camberwell road might have been added to it, with an increase of value to the remainder. But it seems that the wise ones in that suburb of London, who have the matter wholly to themselves, preferred wretched hovels in a mire, and the congregating of a very questionable population, to a fine open space, tastefully laid out, which would have had, at least, some chance of making the neighbourhood genteel, a character which it cannot now acquire, but must remain one of the fag-ends of London, and consign to vulgarity all the vast extent of buildings on the right bank of the Thames, at least, until Denmark Hill is arrived at; and there it is not town, but country, or as it becomes town it will be as vulgar as what lies between it and the Thames. Now, Kennington Common or thereabouts, is the most eligible situation in which a place of public promenade could be situated. Roads converge upon it, or near to it, from all parts of the metropolis, west, east, and centre; and the thoroughfares are, generally speaking, ample and good. This would secure a delightful drive to any pleasure ground that might be there, and an equally pleasant drive back again, so that people could enjoy the exercise both of riding and of walking, which would be agreeable to all, but more especially to invalids; but the time has gone by; the thing is now impossible, and one is left only to deplore the senseless cupidity which has destroyed what would have been so delightful to the public. This cupidity, like all others which are narrow-minded, has itself sustained the greater part of the loss; for if a tenth part of the ground which was unoccupied except as poor and unproductive fields, till about twenty years ago, had been given up for public grounds, much of the remainder would have been increased tenfold in value; a more wealthy and respectable population would have been drawn to the place, and local business of all kinds would have been greatly augmented. But the time for this is gone by, and Kennington Common and its vicinity stand as a record of how far tasteless avarice may overreach itself.

In consequence of this, this neighbourhood has not only not advanced in respectability, as many neighbourhoods have done, but has fallen back in comparison with what it was, only some five and twenty or thirty years ago: at that time Kennington Common drew its quota of carriage visitors on the afternoon of every Sunday and every holiday, and if they were not so tonish as Kensington Gardens, they were to the full as numerous; but all this is at an end now, and one might watch from the first of January to the last of December, without seeing one private carriage stop while its load took a walk in Kennington Common.

The cause, or causes, why certain districts of towns, where the air is pleasant, and the houses not of mean construction, fall off from their respectability without any catastrophe, are rather a curious matter, and not an uninstructive one. In mercantile places, where there are facilities for gambling under the semblance of business, such as in the public funds, or in shares of joint-stock companies, there are always numbers of men who are expert enough in common trade, as merchants, but who, having been bred up, and as it were, confined to the counting house, have thus not an idea beyond the simple getting of money. No matter what may be the commodity in which they deal, where it is brought from, or how curious soever the process is by which it is obtained and prepared for the market: they know and care nothing about these matters; their only object being to purchase the commodity and sell it again at a profit; and this is the sum of all that they know. Now these parties stand in a very precarious situation, and the more crafty they are, and the more cunning they are in their own estimation, they are in the greater jeopardy of falling. They do not frequent the gaming table, because somebody has told them it is a place to get ruined at, but if gambling arises in the way of business from any mania that becomes fashionable, they eagerly enter into that. They may be, and the majority of them are, honest, though narrow-minded, and if cunningly assailed on their weak side they are easily duped. The harpies which plunder society through the medium of its folly, are well aware of this; and they watch their opportunity, and seldom fail in entangling the men to whom we have alluded in their bubbles and speculations, mock or real. These pests of society put one in mind of the fungi which encumber the earth, and poison the grass, at the commencement of autumn. They are signs of the fall of the leaf of that part of society in which they spring up in numbers; and when one finds them besetting any individual or class of individuals, one may be sure that the same catastrophe will ensue as when their fœtid kindred of the fields cluster round the collet of a tree. When the winds of winter blow strongly, the men will be levelled to the dust, just as the trees are. Railroads and other joint-stock companies, to which we have alluded in another part of the path, were peculiarly favourable to the growth of these moral and social fungi, and the result has been the fall of many whom they have entrapped too deeply in these speculations. These fungous or mushroom men contrive to filch a good deal of money at the beginning, and as they fancy that they have open mines that will be productive through life, they set up establishments, and congregate in such places as Kennington. When the storm comes, and many are laid prostrate, these mushroom men become detested, the place gets its share of the odium, loses caste, and is shunned by all respectable members of society,—for who would dwell in a nest of swindlers, or even if one of this stamp, however apparently rich, were at the next door, or in the next street. When the respectable people move off, their places are occupied by parties of broken fortunes and broken characters, and the degradation of the locality is confirmed. We will not attempt to point out the times and circumstances, far less the individual men, who have effected the degradation of Kennington; but it is not the only spot, for there are places at the West End, or rather on that questionable ground, where the advent of a single swindling scheme has tainted the moral air, just as carrion thrown in the street would taint the physical atmosphere. We note this merely in passing,

and to show how careful those who wish to keep a neighbourhood respectable should be in admitting one doubtful character. He is worse than a common thief, for when a thief is detected, he is sent across the seas for life, and forgotten in the country that cast him forth; but the swindler snaps his finger at society, and spends in detestation that which he earned in guile.—But to return to our main subject.

When the *Regent's Park* was first formed out of the not over moral fields of St. Marylebone, and Regent's Street swallowed up Swallow Street, it was expected that the said Regent's Park would be the grand attraction in the vicinity of London, and draw off the fashionable company from Hyde Park and Kensington Gardens. But, somehow, this park has not hitherto taken as it was expected to do, either with the public or with the fashionables. To be sure, there was public grumbling at the shutting out of the people from the sward, and confining them to the road; but it was necessary to do this, otherwise they would have prevented the young trees from growing: but the number attending the walk, or drive, as it may be, is exceedingly limited—only a solitary foot passenger here and there, and a learning horseman, dodging and bobbing along like Johnny Gilpin. The terraces of houses which enter from the walk, or otherwise face the park, are showy, or, more correctly speaking, tawdry enough; but they have not drawn a very fashionable population, and carriages at their gates are almost as rare as passengers on the roads. When the Zoological Society first got possession of that singularly shaped nook of ground where they keep their beasts and birds, the exhibition of these drew a number of visitors; but it does not appear that those visitors paid much attention to the park itself; yet this park is laid out with considerable taste, especially in the western and south-western parts, and especially, as trees which have moisture grow apace, many of the points and islets in the water are well wooded. The eastern part is in by no means so good taste, there being a good deal of gridiron fashion about it; and it is there, too, that the blocks of building are drawn out, in length of front, beyond all reasonable measure.

Besides this, there are objections both to the soil and the climate, or rather, perhaps, the climatal objection is owing to the soil. It is probable at some period this spot may have been a complete marsh, or much of it the bed of a lake, and more recently there appear to have been seasonal pools of stagnant water, which dried up only by evaporation, and thus produced cold. Even now it is a tough retentive clay, which becomes mortar in wet weather, and bricks after long continued drought, and not a drop of water can percolate through it, neither does it absorb and radiate heat like more porous and kindly soils. Therefore, in hot summer weather, there is a powerful reflected heat during the day, but even then the nights are chilly; and when the autumn sets in, the air over it is damp and foggy, and the winter excessively cold. It is only a short distance from Hyde Park, and scarcely more elevated in any part, and yet their climates differ as much as if they were separated by a degree of latitude. In fact, if perhaps we except the more elevated clays at Highgate and Hampstead, there are few less genial climates in the vicinity of London than that of this same Regent's Park. Far be it from us to calumniate even a piece of ground, but the houses, whether of naked bricks or stuccoed over, bear testimony to what we say. It will be found that the bricks there are blackened, the mortar corroded, and the stucco partially greened with the vegetation of dampness, long before a structure near the Thames shows any signs that it was not built yesterday.

This is a species of evidence, against which there is no contending, and thus, though the Regent's Park may do very well for such as are in strong health, it is no place for invalids. The managers of the Zoological Society found this to their cost, when they first placed animals of warm and dry climates upon it, without any extra protection from the damp and cold night air, and from the rain and drizzling north-east wind during the winter. All the animals of tropical climates were sickly, and many of them died; and, notwithstanding the efforts which have been made to render their dwellings warm and comfortable, they still are in inferior health and spirits from what they would be if exposed to a kindly atmosphere in the very same latitude.

But still the Regent's Park is a very showy piece of ground, and one of ample size; and perhaps a more complete drainage might ameliorate the climate, and gravel walks, properly laid out and well drained and constructed, would render it dry under foot, if the frequenters of the park would keep to the paths in wet weather. The proper drainage of clay, especially so tough and plastic a clay as this is, requires, however, a great deal of skill, and also of expense. Underground drains are of comparatively small consequence, because the moisture does not get down to them, and, therefore, the drainage must be of the surface kind, but so constructed as not to spoil the appearance of the sward. Something like mole-plough drains, lined with tile pipes having a narrow opening, and rising up at each side like a sort of flange, are the proper ones for ground of this kind, but they are very costly. Absolute perfection cannot be obtained, however, in a piece of ground so extensive, nor can it be very closely approximated, unless the ground is private property; and therefore the people must take this park as it is, and it is certainly an Eden compared with what it was when it was an open and unimproved field.

That the great breadth of the park will be thrown open to the public in a very short time, is not only reported, but active preparations are making for carrying the approaches from the walk or drive across the reserved ground; and so fairly into that part—by far the greater part of the park—to which the public are to have free access. This surrounding of the park immediately within the external drive, by private grounds, either connected with mansions in the park, or reserved for the use of those inhabiting the terraces, is a capital idea. It prevents the turf from being potched and pattered close to the palings, which would be the case if the multitude had access to these, and it also prevents them from congregating in masses opposite the windows of the houses if they could come up to the railings. It has also other good effects; because, by means of it the marginal parts can be decorated with fancy flowers and shrubs, and kept in much better order than if the public had indiscriminate access to it. What improvement, and whether any, has taken place in the conduct of the ordinary classes toward ornamental grounds, or ornaments, remains to be seen, and is not very easy to say; the treatment which the decorations of this park will receive when opened, will be evidence upon this point. The old practice was to mutilate, deface, and destroy every thing ornamental which they could reach, even though provided expressly for the gratification of better taste, or to give them a chance of acquiring the first elements of such taste. For a very long time, John Bull has been the astonishment of foreigners, from the tendency which he has to destroy every thing which can be considered as public ornament. In such cases he was wont—but we hope better things of him now—to play the "bull in a China shop,"

that is, to toss down with his horns, and trample under with his hoofs, every thing beautiful, thereby showing that he had no taste beyond the gratification of his animal appetites; and no more perception of the beauty or usefulness of any thing decorative, than the said bull has of the beauty of porcelain, or the usefulness of a teapot. We have said that we hope better things of him now; and we trust that there will be a confirmation of our hope on his admission into the Regent's Park. The commissioners have—very wisely, we think—shut him out, until the ornamental planting is so much grown, as that he cannot pull up the trees for switches, or break them as he hoofs across the clumps, with that brute unconscious gaze which is so characteristic of those destitute of intellectual perception and feeling. We trust that the twenty years for which he has been excluded from this park have been years of improvement. Previous to that time, and also during the earlier part of the period, the place would have become the arena for dog-fights, and pugilistic displays yet more brutal than the former. In these, too, the rabble—for they are the rabble, whether high or low, rich or poor, that take delight in such revolting displays,—the rabble would have been but too much encouraged by a sprinkling of persons of higher rank, whose education and station in life ought to have made them a little more decent, if not more moral, and prevented them from setting a bad example, if they were incapable of setting a good one. These abominations are now exceedingly rare even in retired corners, and on distant and neglected wastes; and if a worthless scion of rank frequents such things now, he is in danger of losing caste. But the people must have amusement now as well as then; and hence we infer that their amusements have taken a happier turn, and that observation and reflection have, in a great measure, come in the stead of brawling and blackguardism. This is as it should be, and it ought to be encouraged by every means; for though the great bulk of the people may be enticed and tutored out of their grossness by kindly words and good examples, they are not to be beaten, or bullied, or sermonized out of them; for such attempts only drive home the closer, and rivet the more tightly, those nails of coarseness and vice which they pretend to draw.

The general diffusion of a taste for reading, and the substitution of books of information for tracts of folly and filth, have had a happy effect in operating this change; and though a certain portion of the newspaper press still labours to keep up the abomination, and all of it strives to entangle the people in the vortex of palaver and party; yet common sense waxes strong apace, and is teaching them to perceive more and more every day that that part of politics which is devoted to the warfare of words is really good for nothing else. What has been done, and continues doing every day, in the sciences and the higher arts, has contributed powerfully to the same happy result, and in spite of old vices and adverse circumstances the facts bear us out in stating, that of late years the people of this country are greatly improved in all that contributes to their moral worth, and their rational and substantial enjoyments.

To some this may appear to be a mere episode; but it is one very closely connected with the parks, and the influence which they ought to have upon the public mind and taste. One use of them is for healthful recreation certainly; but this, if it goes no further, is the mere animal use; and it is highly to be desired that the intellectual and moral use should be equal to this, and greater if possible. The grand fault of the merely animal gratifications, which, until a comparatively recent period, were the chief ones provided for or within the reach of the ordinary classes—the working class especially, consisted in this, that they pleased the animal only, and by this pleasing fatigued it, wore out its powers, and rendered it less capable of exertion every time they were engaged in it. Now, the proper amusements, relaxations, enjoyments, or call them what you will, of rational beings, are those which at once tend to renovate the body and the mind, to make the head more clear for perception, and the hand stronger and better nerved for working. This is far more necessary for the labouring classes, especially for artizans, than it is for those who reckon themselves a little higher in rank. This class is the most numerous in London, the most closely confined during the week, and therefore the one which stands most in need of out-of-door recreations on the Sunday evenings; and though the fanatical may scowl, yet it is more conducive to health and morality, and therefore more worthy of the approbation of Heaven, that, for a portion of the Sunday at least, people should worship God in his own temple of nature, than that they should be stewed up morning, noon, and night, in the unwholesome air of a church or chapel, and listen between sleeping and waking to the words said there, which often smack pretty strongly of the character of the atmosphere. Now, a public park or pleasure ground, tastefully laid out, and judiciously ornamented, is about the best place in which to enjoy all the good of such recreation. There is enough of nature in it for elevating the thoughts to the Author of nature, if those thoughts had been properly turned; and at the same time there is enough of art in it, and of taste and elegance in art, to increase the professional tone of the mind; and we have no doubt that when the Regent's Park shall be opened, which, as we have said, will be very soon, it will give tone, elasticity, and a character higher and more capable of improvement, to many who have previously loitered away their Sunday afternoons in the listless dissipation of ale-houses and tea-gardens. For the benefit of this class, the Regent's Park is very well adapted in situation, in extent, and in its decorations; and when one thinks of it, one regrets the more that the artizans on the Surrey side of the Thames have no corresponding place, but must dodge along the public roads, or descend into the ale-houses. It is not enough that those houses are ordered to be kept closed at certain hours, for as long as there are sufficient inducements to evade or break the law, the law will be evaded and broken, in spite of all the surveillance of policemen, and the disgraceful abomination of informers. Going to an ale-house is not in itself a crime, at whatever hour of the day, and on whatever day in the week it may be practised; and when people feel that a practice is no crime, and yet that they are punished as though it were, it rouses their hatred, instead of winning their obedience. To make sure of the latter, the public must be drawn, not driven; and the way to draw them is to provide them with something which is at once better in itself, and more congenial to their feelings. We do not say that parks or any other places of public resort, where there is no proprietor, and no fee levied, will act as charms in this respect; but still they have their attractions; and, for a time at least, the Regent's Park will be more attractive for the great body of the people than any of the others. There will be novelty in the fact of getting into it, and the love of novelty is both congenial and highly useful to human beings; for it has more of the stimulus to improvement in it than almost any other affection that can be named. The park is of ample dimensions; and in so far as such a piece of ground can be diversified in appearance, it is diversified. There are swelling

elevations, whence extensive views may be had; there are sheltered glades, in which visitors may walk apparently as lonely as though they were in the wilds; there are thick groves of very healthful and vigorous trees and shrubs; there are expanses of water, which might be made the habitation of countless aquatic birds, of most elegant species; and there are peeps of buildings, which though not, in our opinion, of a very high order of architecture, are yet vastly superior to the workshops in which artists toil during the day, and the courts and alleys where they rest during the night. We have hinted once and again that this park never can become the rendezvous of the great on their holidays, for it has no attraction for them—no idol which they have to worship either within its circuit, or in its vicinity: but for the great body of the people, this is rather an attraction than otherwise, because they do not like the contrast of being upon the same ground as the great, for it suggests comparisons which are unpleasant.

There are several other direct attractions, which we have no space to enumerate at length, but we may mention one which, for a time at least, will have a considerable degree of interest: this is the western entrance,—the entrance at what we may regard as the most tasteful portion of the whole park. The first part of this entrance has indeed not much to recommend it, for it is merely a walk, railed off from the lawn on the right, and commanding a view of the Marquis of Hertford's house and grounds on the left. But at the termination of a short section of it, the water is arrived at, and a remarkably light and airy chain bridge, designed and executed by Mr. Dredge, conducts to a small, but richly wooded, island. On the other side of the same island, there is a similar bridge leading to the main expanse of the park to which the public are to have free admission; and those two bridges are apparently so slender, yet really so strong, that they will be, for a time, objects of much attention. We would give a detailed account of them, but we shall defer that to a future number, when we can give representations of them, and, in doing so, we shall be able to demonstrate that these are the only bridges perfectly adapted for the ornamenting of pleasure grounds, and, at the same time, for usefulness and durability. So far as matters had gone when we last examined the ground, the innermost bridge did no more than land upon the sward; and whether gravel walks are to diverge for some distance from this, or whether it is to become a *ne plus ultra* sort of puddle in the clay soil, time alone can reveal.

INSTITUTION OF CIVIL ENGINEERS.

THE PRESIDENT AND HIS TROOPS.

A CORRESPONDENT, who not very incorrectly styles himself Nemo, expresses a wish that we should "excise and compress" his communication, and send it to our printer; but we prefer putting it in the alembic, and drawing a little tincture. Of this we shall take only two drops, and dilute them separately with soft water from our own cistern.

First, he complains of the diverting of the meetings from their legitimate purpose, and the turning of them into mere matter of rarec-show. According to him, there was not a single principle or point of civil engineering discussed, or even mooted, during the whole of last session. If this be true—and we have no data upon which to ground a doubt of it,—why, the youngsters that go there wishing to learn, might as well be at the Royalty, or Sadler's Wells, where they could, over their pipe and pot, see all the sights, hear all the mouthings, and the discord of the clarionets and fiddles "to boot and boot."

All this our informant ascribes to what he is pleased to call "the irruption of the Goths and Vandals;" and if he says sooth, he might have added the Huns; for these appear to have burst into the city "by storm and onslaught," and almost to have carried the capitol; an Attila, yea, two or more Attilas, who have marred the purity of engineering taste, as easily as their terrible namesake of old did the classic glories of ancient Rome. They are not engineers in any sense of the term, but merely punchers and hammermen. Nor do they decide matters by human speech and reasoning, but by a trope called the *argumentum ad tabulam*, which often stands the mouthpieces of "a certain house" in capital stead, when the stream of their words runs low, and the wits lie still at the bottom like dregs. When wasted, worn, demented, and dumbfoundered, by launching their pointless and effectless *telum imbelle* all round, they thump upon the table with all their might, invoking the Dryads of deal boards to come and aid them in their extremity.

The grand leaders in this onslaught upon the table, are Mr. Clinkum and Mr. Clenchit; and the mighty cause of all the coil and clatter is, "How many rivets should go to the boiler of a steam engine?" In the understanding of ordinary men, this belongs to the same order as the well-known nursery problems of "How many sticks go to the building of a rook's nest?" or "How many fox-tails would go to the moon?" but it raises the wind hurricane-high at these meetings. Clinkum lays it down as his determined opinion, founded on long observation and experience, that the number should be *six* rivets to the linear inch. The president nods, and they of the distal pews bend their bodies in signal of a silent amen. Not so Mr. Clenchit. His forehead settles down, like a hat of cirro-stratus on the mighty head of Skiddaw or Helvellyn; and all the world knows that a storm is brewed, and wants only to be tapped. His features work to and fro, like the surface of molten bronze when air-bubbles are struggling to escape. He looks askance, upwards, downwards, and lastly, as if, according to the Stagyrite, he was lumping the past, the present, and the future, into one mighty conglomerate. He bolts to his feet, every frame tingling with arrows of indignation. Then, turning to the foe, he, as Drummond says, *In faciem girnavit atrox*, as a prelude of the black lightning of the nether sky; and then comes the thunder clap in these terrific words: "I says, as seven rivets to the hinch is the norvembral number, and him as puts more or less is a hignoramos and a hass!" Then come the adverse winds of utter confusion; the meeting is all at "sixes" and "sevens;" the champions advance to the table, and beat and thunder upon it blow for blow, until the secretary's desk and the president's hammer dances with perfect astonishment. The youngsters gape and wonder, and the seniors, anchoring themselves with both hands to the seat, crouch down with eyes like owls. "Chaos is come again;" and if a stranger had entered, he would, for the time, have fancied himself among the most *un*civil engineers under the canopy of heaven.

But there is one who sits calm and collected amid the storm: the smile goes not off the face of the President; and he appears to look upon the mettle of his boys with a sort of paternal satisfaction. Our informant says, that, for all the world, the imperturbable placidity of the President put him in mind of old father Adam, when

the *ferœ* of every zone came to him, grinning and chattering, growling and yelling, pawing the earth with their feet, and lashing the air with their tails, in order that he might tell them—what beasts they were. Once and away, this might do; but it ought not to be repeated.

The second point, and it is one which will not detain us long, is the obligation the President is under to think of his latter end. Far be it from us,—and we are sure as far from our correspondent or any man,—to wish his health and happiness abridged one day short of the utmost space allowed to men. But the decree has gone forth against every man, and that decree will, sooner or later, bring all men to the dust. A time will come, when the President's chair must be filled by another; and where shall we find a man worthy of being successor to Mr. Walker? We look around us, and can find none. Therefore Mr. Walker should look out for, and adopt and train a successor, so that when, in the fulness of time, he himself shall be gathered to his fathers, the flock which he has tended with so much care may not be left without a shepherd, to wander upon the mountains of vanity. What our correspondent calls "the inroad of the Goths and Vandals," renders this precaution the more necessary. If the members were all civil engineers, according to the name and the original intention, there would be but one *esprit du corps* among them; and this would lead them to choose the best engineer for their president, and to respect him accordingly. At present, the Institution is a conglomerate of crafts; and it is only the suavity and tact of Mr. Walker that keeps them in anything like decent order; and even he cannot keep the meetings to anything like their legitimate subject of engineering. Our correspondent states this broadly, and he is corroborated by our own experience, as far as that goes. We attended the meetings till they brought so heavy a stupor over us, that we could not keep awake; and had we continued even a short time longer, we fear we should, ere now, have been sleeping that sleep which knows no waking.

The talkings of these Goths and Vandals, and the exhibition of gimcrack models of what are called inventions, the accumulation of which is of no more value in the museum of an institution of engineers than if they were so many old brass buttons, takes up the whole of the time; and, however able and willing any man might be, he could not edge in a word about engineering.

This not only brings the Institution into discredit, but it lessens engineers in the estimation of the public, diminishing their pecuniary reward, and preventing public works from being done. We mention no names; but we have heard of works ready to be begun, abandoned, and engineers turned adrift, chiefly for nonsense on the subject of these works, of which they were fools enough to deliver themselves in the theatre of the Institution, not many moons ago.

This is lamentable; and, in conjunction with other circumstances, it will bring British engineers and engineering into disrepute, both at home and abroad. Observant foreigners were acute enough to see that the main source and stay of the wealth, greatness, and power of this country, were the engineering arts, or mechanical arts, based upon or closely connected with engineering. In this they were borne out by a succession of illustrious men, who were equally successful in their several departments; but our Arkwrights, our Brindleys, our Smeatons, our Watts, our Rennies, and our Telfords, were of and for the people; and though the last named illustrious man founded, and in great part endowed the Institution under notice, he derived no name or assistance from it, though his talents and generosity threw a halo of glory around it at the commencement; justice and gratitude for which ought to have made those who survived him keep it strictly to engineering, and devote all their talents to the improvement of the same.

It was from those great men, who held the diplomas of their abilities immediately from their Maker, that foreign nations imbibed their high notions of British engineering; and as the Institution was founded by Telford, and was in a great measure the pet lamb which he carried in his bosom in his latter years, foreigners naturally concluded that the mantle of Telford had descended to those his favourites; and hence the mere fact of connexion with the Institution became a passport to honourable and lucrative employment abroad. But the world are little aware what "filthy dowlas" may be substituted for the mantle even of a great man; and accordingly, those of whom the nation at home have got sick, have but too often sought to wash away their bad odour in foreign climes, and got laughed at for their pains. They put one in mind of another class of adventurers, who, after their characters have got air, and they can no longer play the part of rogues in this country, go abroad, and get the brand of fools deeply stamped upon them. So much has this become the case of late years, that, whenever we find a concocter of schemes, or a soi-disant projector or engineer, going unasked to France or Germany, or any other part of the Continent, we may be sure that he has proved a silly sheep or a black sheep at home.

These remarks are not irrelevant to the point under consideration, for in so far as engineering is concerned, the onus of wiping out the stain lies upon the Institution and its President. Let him and them, therefore, gird up their loins and quit themselves like men; for the redemption of the profession, and the salvation of the country, are in their hands as an imperious duty. The general principle upon which this can and ought to be done is easily stated: the Institution must devote its whole energies to engineering; but the way in which this wants to be done requires some consideration, to which we shall devote a future article.

CHIMNEY FLUES.

SIR,

ACCORDING to the new act, chimney flues are in future not to be less than 15in. by 9, or (if cylindrical,) 12in. in diameter: is this meant to apply to the whole extent of the flue? For if so, all chimney pots, &c. of less diameter are at once condemned. As far as such unsightly terminations are concerned, that will, however, be no loss; but, as experience has proved, that when flues exceed a certain size, contraction becomes necessary, at the top at least, to insure a good draught: if that is henceforth not to be permitted, the fire-places, in order to contain fire enough to rarify the greater column of air that will thus be exposed to its influence, must be enlarged to an inconvenient extent.

Your opinion on the proper construction of the act will oblige

Your obedient servant,

A SUBSCRIBER.

N.B.—According to Tredgold on this subject, flues seldom ought to be more than 8in. or 9in. in diameter, indeed frequently much less; and when climbing boys are no longer permitted, there can

be no objection whatever to making them any size that the particular case may require; and indeed there never was any objection, since there is no necessity, even now, for using so barbarous a mode of sweeping as is about to be forbidden by law.

REVIEW.

Companion to the Third Edition of a Glossary of Terms used in Gothic Architecture, containing Four Hundred Additional Examples, a Chronological Table, and Indexes. 8vo. Oxford, J. H. Parker, 1841.

Of the Glossary itself, we spoke at some length in the second number of our Journal, with well-merited commendation. Indeed, the very circumstance of a work of the kind attaining to a third edition in so very short a time as it did from its first appearance, is a tolerably plain proof of its worth, and of public approbation, of which last this additional volume will, we have no doubt, obtain a corresponding share; for, although it contains no supplementary articles, it is a complementary and almost indispensable, inasmuch as it gives the dates of all the subjects constituting the illustrations. According to the advertisement prefixed to the volume, "In the spring of the year 1840, the copper-plates and copyright of Mr. Britton's 'Dictionary of the Architecture and Archæology of the Middle Ages' was sold by public auction to Mr. H. G. Bohn, by whom the purchase was shortly afterwards transferred to the present publisher, who, after some consideration, decided upon publishing it as a Companion to the Glossary; and extracting so much of Mr. Britton's Dictionary as suited that object, in preference to reprinting the whole as a separate work." Such decision was most discreet—or we might say that there was no other course to be pursued than the one actually adopted—since, to have reprinted Britton's Dictionary, with all its nonsensical twaddle and blunders, would be little short of madness. Mr. Parker, therefore, has acted judiciously in throwing away all the bones and garbage constituting the bulk of that notable literary and antiquarian performance, retaining only the few scraps of information to be picked up out of it, together with Mr. Le Keux's plates. It was, in fact, these last that were the soul of the Dictionary: without them it would have been no more than a lifeless and useless carcase. It was they that embalmed it and kept it from putrefaction; which remark applies equally to the greater part of that "embellished literature," as he styles it, in which Britton has dealt, and which may be said to be literally *plated* ware, that, when the plating is worn off, i.e., when the plates are taken away, is found to be no better than brummagem and brass.

The plates themselves are in excellent condition, and the purchasers of the 'Companion' will have the satisfaction of possessing the joint labours of George Cattermole and John Le Keux, at a comparatively moderate cost, and in a more compact form than when they were given as the mere garnishing to John Britton's 'literature.' It is true the purchasers of the Dictionary will, in one respect, be to be envied, since they are so fortunate as to possess the celebrated "Dedication to Queen Victoria"—and a most precious morceau of its kind it is. However, we are well content to dispense with it, and receive as ample indemnification the dates now first added to the subjects represented, and which it "became necessary to affix to these new examples, as had been done in the former volume" of the Glossary.

"Examples of each successive change in the style of architecture, from the Saxon period to the decline and fall of Gothic, have also been added (in the Companion), and are intended to supply a deficiency which had been much complained of." Unfortunately, we cannot extract any of the plates and woodcuts, else we should certainly transfer that of Thornbury Castle, and one or two others, to our pages. Neither is there any thing we can extract from the chronological table, which, with the remarks incorporated in it, occupies no fewer than eighty pages. It is precisely because the volume is so excellently adapted for one of reference, consequently the information condensed as much as possible, that it is unfitted for quotation from it, which, detached from the rest, would appear only bald and dry. Accordingly, we must almost perforce content ourselves with recommending this 'Companion' as a most serviceable and desirable one to both antiquary and architect. In fact, it needs no other recommendation from us than saying, that the Glossary can now hardly be considered complete without it.

ON THE MANUFACTURE OF RAILWAY IRON.

Mr. Editor—In a late number of your Magazine, there are some remarks on the quality of iron used for railway purposes, which are, I think, of considerable importance. The justice of the remark, that the strictest attention ought to be paid to the quality of all articles used on railways, which are made of iron, few, I think, will be disposed to question. The last week which has passed, has afforded another instance of the necessity for greater caution in this respect than has hitherto been used; the breaking of an axle on the Sheffield and Rotherham Railway having caused an engine and train to be upset, by which the engine-driver and stoker were both killed. I am well aware of the difficulty which attends this subject. Accidents may happen from a flaw, which may exist in the very best iron, and where the greatest care has been bestowed. But my belief is, that such chances of accident are extremely remote, compared with those which have happened, or are likely to happen, from the use of inferior materials. Now, although I readily excuse Railway Directors and Engineers, from any blame in knowingly using articles of inferior quality, I cannot but consider that sufficient attention is not paid to the means of obtaining none but iron of the best manufacture; and this remark I think extends to every article used on a railway which is made of iron—from the rails and chairs themselves, up to the most minute portion of iron-work on the carriages and engines. There is no medium in railway accidents. The breaking of a wheel or an axle; of a rail or a chair; of a spring or even of a chain; may equally throw a train off the rails, and cause the most frightful accidents. And what are the means taken to prevent this? None. The coach maker contracts to supply the carriages; and he purchases his axles from the cheapest manufacturer, the difference in price in this article alone being upwards of 50 per cent., between the best and the inferior manufacturers. The engine maker, to save expence, puts cast iron wheels to his tenders, and perhaps (as in the case of the recent accident) uses axles of doubtful quality. And to complete the list, the Directors purchase their rails and chairs from the cheapest manufacturer, contenting themselves with laying down some general rules as regards the process of manufacture, which the contractors never intend to follow, and which become in fact a dead letter. A considerable portion of this evil arises from the fact, that with some very few exceptions, neither the directors nor the engineers of railways are practically acquainted with the manufacture of iron, and are, therefore, not aware of the immense difference which exists in the quality. The price of railway axles (in their rough state) varies from £12 per ton to £25 per ton. The price of wrought-iron wheels is just double the price of cast-iron; in chairs the price varies as much as forty shillings per ton; and in rails there is a difference of from thirty to forty shillings per ton between different manufacturers; and this, too, in an article where, from the enormous quantity used, the cost of production is calculated by the manufacturer with the greatest nicety. Now, whence arises all this difference? Entirely in the quality of the articles themselves, and not in the amount of profit which different manufacturers consider themselves entitled to, nor in the difference in

the expense of carriage from different parts of the country. For, by a strange anomaly, the cheapest, or rather the lowest-priced articles come from those quarters from whence the carriage is generally the most expensive. A manufacturer who knowingly supplies an article of inferior quality to a railway, provided he is acquainted with the purpose for which it is to be used, is, I consider, morally responsible for all the consequences which may arise from his misconduct; and it is, I think, greatly to be regretted that he cannot also be made legally responsible, to the utmost possible extent which money can compensate, for any accident that may arise in consequence of such misconduct, unless it can be proved that the inferiority was accidental and unavoidable.

One great evil attendant on the employment of iron of inferior quality, arises from the circumstance, that iron exposed to great and sudden changes of temperature, and to a constant percussive action, is liable to a slow and gradual change, arising from a re-arrangement of the particles among each other. Although this may appear too theoretical for some, it is capable of proof by direct experiment in particular and extreme cases. The two great distinguishing features of wrought-iron are known by the names of "cold short iron," and "red short iron," the former being the toughest when hot, and the latter when cold. The cause of this great difference is still involved in mystery. It has been attributed to a minute quantity of arsenic in the former description of iron, which is not present in the latter. But this may well admit of considerable doubt, for by heating red short iron a few times, and suddenly quenching it in water, or by a longer continued process of heating without this sudden cooling process—as, for instance, in the case of wrought-iron furnace bars—the most fibrous and toughest red short iron becomes converted into the most brittle cold short iron, the fibrous appearance being exchanged for that peculiar crystallized arrangement of the particles, which so distinctly marks the cold short quality. By what process this crystalization takes place is wholly unknown; but many similar facts in natural philosophy would lead us to suppose, that the effects of sudden changes of temperature, under peculiar circumstances, merely cause the particles of matter to approach, or recede from each other, to that particular distance which allows of a new arrangement of the atoms among each other. The instantaneous formation of ice, when water is cooled several degrees below the freezing point, and a sudden vibration is communicated to it by a blow given to the vessel containing it, is a familiar instance of this kind of effect, arising from a new polar arrangement among the particles, when, by change of temperature, or some other cause, they are brought within a particular distance of each other. As regards this crystallization of wrought-iron, there are many facts which seem to lead to the conclusion, that iron continually exposed to minute vibrations, slowly changes to that state of crystallization, which can be more rapidly effected by the agency of high degrees of temperature: and if this be the case, we have in constant operation, in many instances, a process which is continually tending to weaken the cohesive strength of iron, and which will more readily take place in iron which partakes in any degree of the cold short character. This I think will scarcely be doubted, if we may at all draw any analogy with the process of the congelation of water already alluded to. When water has been cooled several degrees below the freezing point, a sudden blow given to the vessel will, generally, but not always, cause its instant congelation. But if the smallest possible particle of ice be put into the water, the crystallization of the whole mass will always be instantaneous. We may imagine, therefore, if any similarity exists between the two cases, that iron possessing a tendency to the cold short quality will, when subject to the constant state of vibration to which it is exposed on railways, more rapidly deteriorate than red short iron, and become more crystalline in its texture, and therefore possess less cohesive strength.

But whatever may be the tendency to deterioration, there is far too little attention paid to procuring, in the first instance, iron which has been manufactured by processes likely to secure an approved quality. I need scarcely say, to those acquainted with the subject, that railway axles cannot be made of faggotted iron (which I consider indispensable for this purpose), for the low price at which they are charged by some manufacturers, and therefore inferior materials are always substituted. I shall, however, pass over this, and confine my remaining observations to the manufacture of railway bars and chairs.

The iron masters have for many years been trying to avoid the process of refining the metal that is used for remanufacturing at the forge. As far as mechanical structure, and even chemical examination goes, the process of refining appears merely to reduce the better qualities of pig iron to the same state as the common "white iron" produced by the furnace. But experience proves that the one cannot be substituted for the other without a very great deterioration of quality in the manufactured bars. Many years of continued experiment have fully proved this, and it matters not that no rational explanation can be given why the one will not answer the purpose of the other. All parties are agreed that "refining" is necessary to produce really good iron, and that no addition to the subsequent operation of "puddling" can compensate for neglecting it. But the saving of expense is considerable by this mode, and hence the Staffordshire iron masters are now very generally adopting the plan of omitting the refining process in the manufacture of rails, to enable them to compete with the Welsh manufacturers, who, it is supposed, can make iron cheaper than their English competitors. The processes which all pig iron ought to undergo, in order to convert it into bars, are, refining, puddling, shingling, rolling, piling, balling, and re-rolling. This makes common or No. 2 bars, which, when cut up and again heated, are rolled into rails. Now nothing *less* than this process ought ever to be employed for rails, and several manufacturers increase these processes in different ways, some by an additional hammering, and others by an additional heating and rolling, before rolling the iron into rails. But some also there are, who considerably *reduce* these processes, in the following manner:—They leave out *both* the refining and the shingling, substituting for the former a trifling addition to the time the metal remains in the puddling furnace, and for the latter, or shingling process, they give the blooms a "nobbing," as it is technically called, which puts the iron into a little better shape for the rolls, but adds nothing to its quality, as when the shingling hammer is used. Some manufacturers still further reduce these operations, by using a portion of No. 1 bars, which have only passed once through the rolls. Now the result of all this is that the finished rails, instead of being of a tough fibrous texture, are only one remove from cast-iron in quality. The bars, if broken, will present a crystalline appearance, and in strength they bear no comparison to iron which has been properly manufactured. This I consider to be a most serious matter. Thousands, nay, tens of thousands of tons of rails have been made, and are now making in this way, and the Directors and the engineers are alike ignorant both of the practice and of the very serious results to which it may lead. The least evil to which it will lead, is the probable shorter duration of the rails, when they come into constant use, which I believe they have yet scarcely done, as but few of the lines to which these rails have been supplied have been yet opened, or been much exposed to heavy traffic. But I entertain no doubt whatever, that sooner or later most disastrous consequences will result from this most paltry economy, however questionable it may be who may be the parties on whom the blame will rest. The loss, of course, will fall on the Railway Companies; they are the parties to lose on all occasions, whether in fault or not. Milch cows they are, to all persons, and for all purposes; and, therefore, the question of loss requires no discussion. But it will be well, if all Companies would ascertain, who are, and who are not, the parties that follow a proper mode of manufacture, before they enter into contracts of such vast importance.

There are, however, other causes which deteriorate the quality of iron, not less than deficient processes of manufacture. The minerals of some districts are naturally so weak, that no art or care in the manufacture, can render the iron made from them sufficiently strong for any description of railway work. I am unwilling to enter into particular descriptions, which might appear invidious, or which might seem the result of personal interest. Neither of these sentiments, however, influences me, as I have no interest whatever in the question, nor any motive beyond that of making known a matter of what I consider great public importance.

But if the question of the strength of the minerals, from which the iron has been made, is a matter of importance in the case of rails, where, according to the general plan at present in use, the rails are made so exceeding strong, for the purpose of resisting deflection, that they may be considered comparatively free from the liability to actual fracture; it becomes of double importance in the case of railway chairs, which are constantly liable to fracture from the very nature of the materials of which they are made, as well as their form and the position they occupy. The very general introduction of the hot blast, has tended much to deteriorate the strength of pig iron. I consider cold blast iron ought alone to be used in the manufacture of railway chairs; and not only so, but that the strongest descriptions only of cold blast pig iron ought to be allowed to enter into their composition. Instead of this being generally the case, the greatest rubbish, provided only that it possesses the general characteristics of iron, is frequently used for this purpose. The very worst description of old iron, so bad as to be unfit for any other purpose, is purchased expressly for mixing with other iron to make railway chairs; and the only wonder is, not that such chairs should frequently break, but that they should ever stand the required strain. Others there are who mix the pig iron with the commonest description of hot blast iron; and others—and they too among the largest manufacturers—cast the chairs direct from the furnace instead of making them from pig iron of the second fusion. Now, all these practices, while they tend to reduce the cost of the chairs, are, I contend, dangerous in the extreme; and no saving

which can be effected by these means ought for a moment to be put in comparison with the danger which must result from the use of inferior iron either in the rails or chairs.

In conclusion, I would strongly urge the attention of engineers and Directors to this important subject, as sooner or later it must force itself on their notice; and it would be well should this occur before more serious loss and damage should arise.

I am, Sir, your obedient servant,

BETA.

8th June, 1841.

Railway Mazagine.

BRIDGES, ANCIENT AND MODERN.

(*Continued from page* 139.)

BRIDGES IN ENGLAND.—The progress of bridge-building in England seems to have kept pace with the same art on the continent. The very singular bridge at Croyland in Lincolnshire, is said to have been built in 860. This date is likely to be correct; for Croyland Abbey was founded in 716, and the Abbey of Rumsey, in Huntingdonshire, in 974. (Bentham's *Essays.*) This bridge has three distinct approaches, formed by three segments of a circle, which, meeting in the middle, compose pointed arches, their bases or abutments standing upon the points of an equilateral triangle.

It is worthy of remark, that the bridge of Avignon was begun under the direction of Saint Benezet in 1176, and that of London begun to be built of stone under the direction of Peter of Colchester, a priest, in the same year (1176). The French "Brothers of the Bridge" accomplished their magnificent and useful work in 12 years; the labours of the English priest occupied 33 years; but this may be accounted for, by considering the interruptions which must be experienced in a river, where the tide rises twice every day from 13 to 18 feet. We may further remark, that as the constructions of the bridges of St. Esprit and Lyons immediately succeeded to that of Avignon, so the bridge at Newcastle-upon-Tyne was built of stone in 1281, and that over the Medway at Rochester, consisting of 11 arches, much about the same time.

In London bridge there were 19 arches, and it was 45 feet in breadth. For many ages there were houses along each side of it; but these were removed, the middle pier was taken away, and the space including the two adjacent arches, converted into one arch of 72 feet span, in 1758. The remaining old arches were very narrow, and the piers enormously large, being from 15 to 25 feet in thickness above the sterlings. The passage over the bridge was very commodious, but in other respects it was very inferior to the before-mentioned old French bridges.

Many other old English bridges might be described, which, in conformity with the turbulence of the times, were generally fortified with gateways. It would be curious to trace their history, and delineate their features; but as the limits of our present article will not admit of this, we shall pass on to those of modern times, from which our readers will derive more useful information.

In 1636, the English Palladio (Inigo Jones) gave a design for a bridge, which was erected at Llanwst in Denbighshire. It consists of 3 arches, segments of circles; the middle one is 58 feet span, and rises 17 feet, the piers are 10 feet thick, and the breadth of the soffit of the middle arch is 14 feet. The arch stones of the largest arch being only 18 inches deep, the covering over them being little, and the approaches very steep, the bridge has a very light appearance.

The bridge over the river Thames at Westminster, being not only the greatest work of the kind in England, but having, in what regards laying foundations in deep water, and constructing centers for large arches upon navigable rivers, formed a new school for bridge building in this island, we shall give a detailed account of it.

From reports made by Mr. Labalye, (1751) it appears, that from 1734 to 1738, the time was employed in obtaining acts of parliament, and determining the precise situation and plan of this great work. In 1738, the situation was finally determined to be a little way below New Palace Yard; the model made by Mr. Labalye was approved of, and he was appointed engineer. The intention at this time was to construct the piers of stone, and place a wooden superstructure upon them. This latter part was designed by Mr. James King, who contracted to complete it in 12 months after the piers were finished, for £28,000.

It was not till after many explanations and discussions, that Mr. Labalye satisfied the commissioners, appointed by parliament, of the facility, economy, and security to be derived from laying the foundation of the piers in caissons or chests, instead of placing them upon piles in the ancient manner, cut off about the level of low water; or using batterdeaux or coffredams, formed around the foundations, and pumping the water from the inside, as had been performed in more modern times. This beautifully simple mode was, however, adopted, and the first stone of this great fabric was laid by the Earl of Pembroke on the 29th January, 1739. During the same year, the commissioners directed Mr. Labalye to prepare a design for a superstructure of stone, which he did, and it was approved of and adopted on the 31st January, 1740. A liberal arrangement having been made with Mr. King respecting his contract for the wooden superstructure, he immediately designed, for the stone arches, those excellent centres, which have ever since served as a model for works of a similar kind in England.

The works were carried on with great dispatch and success; the centre of the last arch was struck on the 25th July, 1747, and, on the 14th November, the roads and streets were finished. A circumstance, however, took place, which prevented the bridge from being, at that time, opened to the public. The workmen employed to get gravel out of the bed of the river to cover the roadway of the bridge, finding some very suitable near the third pier, on the western side of the centre arch, they excavated considerably lower than the foundation, and too near it; the gravel then run from under the platform, and the pier sunk so much as to render it neeessary to take down the two arches which rested upon it. The securing the foundation, rebuilding the pier and two arches, and replacing the parapets, pavements, and roadway, was completed, and the bridge opened to the public on the 18th November, 1750. This bridge consists of 13 large and 2 small arches; their forms are semicircular; the middle one is 76 feet span, and the breadth over the parapets 44 feet.

About 10 years after the completion of Westminster bridge, another was begun to be erected between it and London bridge, now well known by the name of Blackfriars. The design was made by Robert Mylne. It consists of nine arches of an elliptical form; the middle one is 100 feet span, and the breadth across the bridge is 43 feet 6 inches. Mr. Mylne benefited by the example of Labalye, and built the piers in caissons; but, probably alarmed by the sinking of one of the piers at Westminster, he drove piles in the spaces upon which the bottoms of the caissons are placed. His arches being of wider span and of an elliptical form, his piers of proportionally less thickness, and having less masonry over the top of the arches, this bridge has a much lighter appearance than that of Westminster. It has been doubted, whether the slender detached Ionic columns are a proper accompaniment to such a work, and whether the divisions of the lengths of the rusticated headers of the arches are any improvement. His centers are evidently a copy of those used at Westminster.

The general style of this bridge bespeaks a mind emboldened by the success of his predecessor, to advance, though very cautiously, a step further in the practice of bridge building. It is a work of great merit, and will not suffer by a comparison with any other constructed in the same age. It was begun in 1760, and completed in 10¾ years.

At the same time that this noble work was carrying on at Blackfriars, a very fine bridge was constructing upon the river Tay, at the town of Perth in Scotland. It consists of nine arches; the middle one is 77 feet span, the width across is 26 feet, and the total length is 906 feet. It was designed and executed under the direction of Mr. Smeaton, between 1760 and 1771. About the same time, and under the direction of the same gentleman, a bridge of no inconsiderable magnitude was built over the river Tweed at Coldstream, consisting of 5 arches, the middle one being 64 feet span; and also a bridge of seven arches over the river North Esk, near Montrose.

Previous to forming the plan of that magnificent extension of the city of Edinburgh, known by the name of the New Town, it was necessary to form a commodious communication w th the central part of the High Street of the Old Town. This was accomplished by constructing a bridge over the deep valley called the North Loch. This bridge consists of three arches, each about 72 feet span, and two small arches each 20 feet span; the height from the present surface of the ground to the springing of the arches on the piers, is 17ft. 6in.; the arches being semicircular, rise 36 feet, the archstones are 2ft. 9in., and from the top of the archstones to the top of the parapets, is 9ft. 9in., making the whole height, from the surface of the ground to the top of the parapet over the middle arch, 65 feet; the breadth across the soffit of the arches is 42ft. 3in. From the arches to the banks on each side of the valley, the spaces are occupied by coach houses, stables, &c. formed under the roadway. The outline of the cornice and parapet, contrary to usual practice, is a curved line, bending downwards. This, in viewing the elevation, gives the appearance of the middle part of the bridge having sunk. Excepting the arches, which are fine and well executed, no part of the design claims much commendation; and we cannot help regretting, that the architect, Mr. Mylne, has failed in rendering this structure a suitable feature to the singularly fine situation which it occupies.

SIR JOSEPH BANKS AND STEAM NAVIGATION.

We copy from the *Mechanics' Magazine* the following curious account of an interview between Sir Joseph Banks and Mr. Thomas Oxley, in the year 1808, respecting a project of the latter for the construction of a vessel to be moved by steam. A correspondence had previously taken place between the parties, which, like the following conversation, places the qualifications of the worthy baronet for the high post he held in the scientific world, in no very luminous point of view. So perversely obstinate a shutting of eyes, on the part of one who ought to have known better, to what was soon to beam with the full light of day, as the whole transaction manifests, has never before perhaps been put on record.

"With this strong conviction of the ultimate success of the application of steam to the purposes of navigation, on having carefully perused Sir Joseph Banks's letter, and having observed that he had not said therein what his objections were, nor stated the reasons why the attempts of other persons had failed, I immediately formed the resolution of going to see Sir Joseph himself, and hear from him what objections he could urge against the invention, and also learn from him what had been the causes of failure in others who had made similar attempts: for I believed that by a personal interview I could easily remove all objections from the mind of Sir Joseph, and fully convince him of the practicability of my invention, and, by showing him that I would avoid those causes of failure which had rendered others unsuccessful, induce the honourable baronet to reconsider my plan, and so have got his recommendation and that of the Royal Society; for I was then simple enough to think, that, under such patronage my invention could not fail of making my fortune.

"Accordingly, buoyed up with these flattering hopes, I went to the house in Soho-square, a day or two after the receipt of Sir Joseph Banks's letter, to ascertain, if possible, the very day when the honourable baronet would be in town; and I was very civilly told by those attending in his house, that something had occurred which would cause Sir Joseph to be in town about a fortnight sooner than had been expected: and that if I would call again in eight or nine days, I should be sure to see him. I went again at the stated time, and having given my name, was ushered into the study of this very learned personage; and, after I had made my obeisance to his honour, he addressed me in this manner: 'I am glad to see you, Mr. Oxley. And so you are the young gentleman that fancies he could make ships to sail by means of steam-engines—very extraordinary indeed, young gentleman—take a seat, and draw near me, for I shall feel very happy to convince you of the impracticability, I may say the impossibility, of yourself or any body else ever being able to sail or navigate by steam machinery; it is quite useless to think of such a thing; and when I see a young man of ability engage in impracticable objects, I think it only my duty to persuade him not to devote his time and talents to such useless pursuits. Did you never hear of Mr. Jonathan Hulls, as an inventor of navigating by means of a steam-engine? And of a gentleman in North America, (I believe a Mr. Bushell, or Bushnell,) who did the same thing; and of Mr. Symington and Mr. Bell, in Scotland? These gentlemen, most of them, attempted the same sort of thing, years before you were born, and more latterly Earl Stanhope, and all of them have entirely failed in their attempts to navigate by steam machinery. And do you think, young gentleman, that you are *cleverer* than my noble and very talented friend, Earl Stanhope? Why, surely, you must have a very high opinion of your own abilities, if you think you could accomplish successfully what the other gentlemen, and also what my noble and very talented friend Earl Stanhope, had all of them entirely failed in. I can assure you, young gentleman, the thing is quite impossible; nothing need be better than the present mode of navigating, and I do assure you that nothing will ever be found out to supersede the use of sails.'

"Here Sir Joseph came to a full stop. I then thought it right to tell Sir Joseph, that, as I had never heard any thing about what had been done either by Earl Stanhope or the other gentlemen he had named, I therefore hoped Sir Joseph would not think that I was placing myself either in opposition to, or in competition with, either them or his noble and very talented friend Earl Stanhope; neither did I consider myself more clever than his noble and talented friend; but as Sir Joseph was so well acquainted with what they had done, I should esteem it a very great favour if Sir Joseph would inform me of it, and also explain to me his own objections against *sailing* by means of a steam-engine; for, though I did not think myself more clever than the gentlemen and the nobleman that Sir Joseph had mentioned, yet, as I had been long considering the subject, I believed that I might have thought of some things connected with it that they might not have thought of, and this gave me great hopes of success.

"Sir Joseph then went into a pretty long detail of their experiments: he then observed, that he had explained to me what sort of machinery they had made use of; and then Sir Joseph smiling, as I thought, sarcastically on me, said, "Well, young gentleman, as you were very desirous that I should state my objections against sailing by means of steam-engine machinery, these objections may be expressed in few words, but cannot be refuted; and it may not be amiss to remind you, that whatever approaches the works of nature, is likely to succeed: this fact is very strongly exemplified by the old-fashioned mode of sailing, which has been found to answer so well for very many centuries; it is perfectly natural, or at least a very strong approximation to the works of nature. You have only to recollect, young gentleman, the close resemblance that exists between a ship sailing on the ocean and a *bird* flying through the regions of the air; here you may at once see the strong analogy that exists between them: it is hardly necessary to tell you that the sails of a ship and the wings of a bird are perfectly analogous. But what analogy can you find between the works of nature and making a ship sail by means of a steam-engine? I would say none whatever: and I, in my capacity as President of the Royal Society, have had very many opportunities of seeing the plans of many curious inventions, and in that official capacity have come in contact with a vast number of ingenious and talented gentlemen, and would wish to give to every one the full credit of his ingenuity and talent, and would not have it thought that I speak any way in disparagement of the gentlemen and nobleman before mentioned as inventors of navigating by steam machinery, long before you invented your plan for the same purpose: it was, indeed, little, if anything, better than a mechanical mania in them, to attempt a thing so contrary to nature in all its bearings. But, for those that come after them, warned by the example of their entire failure therein, I think it no better than complete madness to make attempts in the same impracticable projects, as my objections will most clearly prove to you. In the first place, all machinery, and particularly machinery impelled by steam, requires to be kept very steady, and free from shaking; this can be done, as respects steam-engines fixed on the land, very easily, but upon the water it is impossible to do it. The rolling of the ship or vessel, occasioned by the waves, would shake and derange the machinery, and interrupt its motion; and, moreover, the last objection which I shall mention,' said Sir Joseph, 'is completely fatal to all such contrivances, and is, that the revolving oars, or that part of the machinery exposed to the action of the water, is instantly broken—it is snapped in pieces, like glass—it is quite impossible to make the machinery strong enough to resist the rough and boisterous waves of the ocean.' I then told Sir Joseph, that his objections were certainly very strong ones; but that if others that had tried experiments had not made their machinery strong enough I did not see that need prevent me, if my plan was brought into action, making my machinery so strong that the waves could not break it, nor derange it, more particularly as it would all, or the greatest part thereof, be made of iron; and though the motion of the waves was very strong, I thought that iron was still stronger, and if I did not make the machinery strong enough at the first experiment, I would afterwards increase the strength of it, two, three, or four times as much; until I had found out a degree of strength that could not be broken or injured by the rough waters of the ocean. At this point Sir Joseph Banks interrupted me, and began to repeat his objections, by saying, 'You seem, young gentleman, to forget that, in making your machinery so very strong as you propose to do, that you would at the same time be making it very heavy, so heavy, indeed, that it would be a load of itself—a complete burden to the ship or vessel that had to carry it: in fact, to make it strong enough to resist, without being broken, the rough waters of the ocean, would so increase the weight of the machinery, as to make the ship be in danger of sinking. So now, Mr. Oxley, I convince you that you are placed between the two horns of a dilemma; for if you would make the steam machinery sufficiently light, as not to be a burden to the vessel containing it, then it will not have sufficient power to impel the vessel forward, nor sufficient strength in its materials, but would very soon be broken in pieces by the waves: and on the contrary, if you made it so strong as not to be broken by the roughness of the water, then you fall on the other horn of the dilemma, and overburden and sink your vessel by the weight of the machinery. So you see, young gentleman, contrive as you will, your invention is completely impracticable, as were all the others for that purpose; and I would therefore earnestly advise you to abandon all thoughts of it, for it may be placed along with the *perpetual motion*, among that class of objects that but too frequently raise up groundless expectations in ardent minds, only to mislead and ruin those that go in pursuit of them. I shall glad to see you some other opportunity, if it be only to further dissuade you from so chimerical a project; so, for the present, I bid you good morning, Mr. Oxley.'

"In about three weeks after, I paid Sir Joseph Banks another morning visit, but I could not succeed in convincing him of the practicability of navigating by steam: he repeated his former objections with much warmth and earnestness; so, finding that it was quite hopeless to say anything more about my invention, and wishing to finish our discourse and my visit

pleasantly, I being then very conversant with chemistry, &c., asked Sir Joseph, how chemistry and galvanism were progressing? Then the honourable baronet, with the greatest apparent kindness and condescension, immediately went into a minute explanation and encomium of the then recent brilliant discoveries, made by Sir Humphrey Davy, of the two new metals, sodium and potassium, and on many other interesting topics connected with the physical sciences; and I believe Sir Joseph felt pleasure in convincing me of his great intimacy with those departments of knowledge, for he conversed with me at least two hours on these subjects, in the most agreeable and pleasant manner; and I can also believe that Sir Joseph might have been very clever in chemistry and natural history, but I cannot help thinking that he knew very little of the mechanical sciences. I then took my leave of Sir Joseph, thanking him for his great kindness and attention to me: and, as you may naturally think, Mr. Editor, inwardly regretting that I could not persuade him to think favourably of my invention."

MISCELLANEOUS.

Artesian Wells.—The tube for lining the Artesian well of Grenelle has been commenced lowering into the orifice. Each division of the tube is nine metres, or 29½ feet long, and fixed on to the next one by 42 screws, over which a strong soldering is made. The tube has been subjected to a pressure of 20 atmospheres in all its parts. Messrs. Arago and Humboldt were present at the commencement of this operation. The precise quantity of water now thrown out of the orifice is 2,200 litres (581 gallons) a day.—*Galignani.*

Artesian Well at Southampton.—The works of this most important undertaking are now in full progress, and the depth of 344 feet has been attained. The soil at this depth is a hard clay having the appearance of dark coloured rock, but softening on exposure to the air. Should no unforeseen difficulty arise, we may look for an early completion, as the spirited manner in which the works are carried on shows that nothing will be wanting on the part of the contractors to obtain for the town the unfailing supply of pure water which the success of the undertaking will render available.—*Hants Independent.*

Paris and Orleans Railway.—The works on this line are going on with great rapidity, and 24 locomotive engines were ordered of Mr. Stephenson, of Newcastle, several months ago. From the results of the branch from Paris to Corbel, it appears, that from the 20th of September last to the 31st of May, 253 days, the number of passengers was 505,394, and total amount of receipts 764,360 francs, being an average of 1 franc 51 cents for each person. This total gives an average of nearly 2,000 persons per day, or about 759,000 persons per annum, the receipts of whom would be about 1,100,000 francs. Estimating the expenses of this portion of the road at 10,000,000 and the current expenses at 45 per cent., it would give a net revenue of about 600,000 francs, or about 6 per cent. interest.—*Galignani.*

LIST OF PATENTS,

Continued from page 144.

(SIX MONTHS FOR ENROLMENT.)

John Chater, of the town of Nottingham, machine maker, and Richard Gray, of the same place, lace manufacturer, for "improvements in machinery for the purpose of making lace and other fabrics, traversed, looped, or woven."—Sealed June 26.

Willoughby Methley, and Thomas Charles Methley, of Frith Street, Soho, ironmongers, for "improvements in machinery for raising, lowering, and moving bodies or weights," being a communication.—Sealed June 26.

Moses Poole, of Lincoln's Inn, gent., for "improvements in producing and applying heat," being a communication."—Sealed June 26.

William Losh, of Little Benton, Northumberland, Esq., for "improvements in the manufacture of railway wheels."—Sealed June 26.

Nathaniel Benjamin, of Camberwell, gent., for "improvements in the manufacture of type," being a communication.—Sealed June 28.

William Knight, of Durham Street, Strand, gent., for "an indicator for registering the number of passengers using an omnibus, or other passenger vehicle."—Sealed June 28.

Christopher Nickels, of York Road, Lambeth, gent., for "improvements in the manufacture of mattresses, cushions, paddings, or stuffings, and in carpets, rugs, or other napped fabrics."—Sealed June 28.

William Thomas Berger, of Upper Homerton, gent., for "improvements in the manufacture of starch."—Sealed June 28.

Thomas Machell, of Soho Square, surgeon, for "improvements in raising and conveying water and other fluids."—Sealed June 28.

George Henry Phipps, of Deptford, engineer, for "improvements in the construction of wheels for railway and other carriages."—Sealed July 2.

Thomas Hagen, of Kensington, brewer, for "an improved bagatelle board."—Sealed July 7.

George Onions, of High Street, Shoreditch, engineer, for "improved wheels and rails for railroad purposes."—Sealed July 7.

Robert Mallet, of Dublin, engineer, for "certain improvements in protecting cast and wrought iron and steel, and other metals, from corrosion and oxidation, and in preventing the 'fouling' of iron ships, or ships sheathed with iron, or other ships or iron buoys, in fresh or sea water."—Sealed July 7.

William Edward Newton, of Chancery Lane, civil engineer, for "certain improvements in the manufacture of fuel," being a communication.—Sealed July 7.

Thomas Fuller, of the City of Bath, coach maker, for "certain improvements in retarding the progress of carriages under certain circumstances."—Sealed July 7.

Andrew Mac Nab, of Paisley, North Britain, engineer, for "an improvement or improvements in the making or construction of meters or apparatus for measuring water or other fluids."—Sealed July 7.

Charles Wheatstone, of Conduit Street, gent., for "improvements in producing, regulating, and applying electric currents."—Sealed July 7.

John Steward, of Wolverhampton, Esq., for "certain improvements in the construction of piano-fortes."—Sealed July 7.

Thomas Young, of Queen Street, London, merchant, for "improvements in lamps."—Sealed July 9.

Charles Payne, of South Lambeth, chemist, for "improvements in preserving vegetable matters where metallic and earthy solutions are employed."—Sealed July 9,

William Henry Phillips, of Manchester Street, Manchester Square, civil engineer, and David Hickenbotham, of the same place, gent., for "certain improvements in the construction of chimnies, flues, and air tubes, with the stoves and other apparatus connected therewith, for the purpose of preventing the escape of smoke into apartments, and for warming and ventilating bedding."—Sealed July 13.

Benjamin Beale, of East Greenwich, Kent, engineer, for "certain improvements in engines to be worked by steam, water, gas, or vapours."—Sealed July 13.

Moses Poole, of Lincoln's Inn, gent., for "improvements of steam baths and other baths," being a communication.—Sealed July 13.

Miles Berry, of Chancery Lane, civil engineer, for "improvements in the construction of locks, latches, or such like kind of fastenings for doors and gates, and other purposes to which they may be applied," being a communication.—Sealed July 14.

Thomas Peckston, of Arundel, Street, Strand, bachelor of arts, and Philip Le Capelain, of the same place, coppersmith, for "certain improvements in meters for measuring gas and other aeriform fluids."—Sealed July 15.

Andrew Smith, of Belper, Derby, engineer, for "certain improvements in the arrangement and construction of engines to be worked by the force of steam or other fluids, which improved engines are also applicable to the raising of water and other liquids."—Sealed July 21.

John Mac Bride, manager of the Nursery Spinning Mills, Hutchesontown, Glasgow, for "certain improvements in the machinery and apparatus for dressing and weaving cotton, silk, flax, wool, and other fibrous substances."—Sealed July 21.

John White Welch, of Austin Friars, merchant, for "an improved reverberatory furnace, to be used in the smelting of copper ore, or other ores which are or may be smelted in reverberatory furnaces."—Sealed July 21.

Frederic Theodore Philippi, of Belfield Hall, calico printer, for "certain improvements in the production of sal ammoniac, and in the purification of gas for illumination," being a communication.—Sealed July 21.

William Ward Andrews, of Wolverhampton, ironmonger, for "an improved coffee pot."—July 21.

William Newton, of Chancery Lane, engineer, for "certain improvements in machinery for making pins and pin nails," being a communication.—Sealed July 28.

Anthony Bernhard Von Rathen, of the borough of Kingston upon Hull, engineer, for "improvements in high pressure and other steam boilers, combined with a new mode or principle of supplying them with water."—Sealed July 28.

Anthony Bernhard Von Rathen, of the borough of Kingston upon Hull, engineer, for "a new method or methods, called by the inventor, 'the united stationary and locomotive system, of propelling locomotive carriages on railroads and common roads, and vessels on rivers and canals, by the application of a power produced or obtained by means of machinery and apparatus unconnected with the carriages and vessels to be propelled."—Sealed July 28.